SOCIAL ORGANIZATION UNDER STRESS:
A Sociological Review of Disaster Studies

by
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DISASTER RESEARCH GROUP

The Disaster Research Group is an activity of the Division of Anthropology and Psychology, National Academy of Sciences — National Research Council. It succeeds and carries on many of the functions of the Committee on Disaster Studies, which met under the auspices of the Division of Anthropology and Psychology from 1952 to 1957.

The Group conducts research, sponsors conferences and publications, and generally provides advice on problems of human behavior in disaster and civil defense. To assist the new Office of Emergency Planning it has created the NAS - NRC Committee on Behavioral Research (Advisory to OEP). The Group continues publication of the Disaster Study Series initiated by the Committee on Disaster Studies.

The Group's activities have been supported by the Surgeons General of the Armed Forces, the National Institute of Mental Health, the Ford Foundation, the Office of Civil and Defense Mobilization, and the Office of Emergency Planning.

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PREFACE

The per capita expenditures for research and development in our national society during the past nine years have nearly tripled. However, the art and science incident to the initiation, management, and evaluation of the research process, as well as the application of the knowledge resulting from this vast effort, have not kept pace with the rate of expenditures or the increase in the range of subjects investigated. Fortunately, there are increasing signs that these ancillary activities are beginning to get some well-deserved attention. [1] The growing interest among anthropologists, psychologists, sociologists, and science historians in the growth and structures of these sciences promises to illuminate these ancillary matters and to facilitate the development of more adequate control and evaluation procedures. Hopefully the new methods and techniques will ultimately contribute to the optimum use of research scientists and their budgets.

Thus the timing of research program evaluations remains essentially an ad hoc matter and its occurrence is often due to fortuitous circumstances. This report is no exception. It was initiated by a new technical director at a time when it seemed likely that the Disaster Research Group's program within the National Academy of Sciences—National Research Council would soon be discontinued. The decision to initiate the evaluation efforts was guided by a kind of gut-level awareness that the study of human behavior in disaster had progressed to the point when it should be subjected to the most pertinent and reliable methodological and theoretical evaluations. It was assumed that the scientific community as well as operational agencies would benefit from the codification of the knowledge from the completed research.

With the publication of Dr. Barton's work, two volumes from the assessment effort are now available. The present one has been written by a social scientist trained primarily as a sociologist and having a demonstrated understanding of theory and method. Given society's involvement in disasters as well as its historic sense of

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[1]See Stevan Dedijer, Measuring the growth of science, Science, 1962, 138 (3542).

social responsibility for these events, this is most appropriate.[2] At this date in the study of disasters there is need to give added emphasis to the social dimensions. A large part of the completed field work has focused on psychological reactions to events rather than the responses of families, groups, and other social units.

The second volume is the recent Man and Society in Disaster, published by Basic Books, Inc. Here the objective was to assemble a group of mature scientists from several disciplines and ask them to examine the specific substantive features of the completed studies of disastrous events as well as the theory, methods, and techniques that have been employed. Thus, the two volumes were designed to complement each other.[3]

Explicit in Dr. Barton's work as well as in Man and Society in Disaster is an awareness that future research projects on disaster behavior must be carefully conceptualized and managed as parts of an interrelated program. The fact that today's evaluations suggest that the completed studies sometimes suffered from an absence of appropriate theory or method is understandable. New research projects can now benefit from these earlier efforts. Furthermore, the completed studies have provided Dr. Barton and the sixteen other contributors to the codification project with the basis for developing numerous research propositions, hypotheses, and several methodo-logical and theoretical suggestions. Dr. Barton's conclusions and his eight recommendations offer the research community and the directors of operational disaster programs a well-informed base for the devel-opment of long-range programs. That future research will require a firm and continuing source of substantial support is reaffirmed. The fact that this kind of support has not always been available could be responsible for some of the uneven developments in the program.

The reader will recognize his indebtedness to Robert Merton for a most comprehensive introduction, which readily relates the study of disaster behavior, especially Dr. Barton's work, to several of the mainstreams and currents in social science. Patently, the research program that does not periodically draw on these wellsprings

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[2] The first systematic study of a disaster was also accomplished by a Columbia University sociologist, Samuel Prince (Catastrophe and social change, New York: Columbia University Press, 1920).

[3] A portion of the fourth chapter of Dr. Barton's report was published as the eighth chapter in Man and Society in Disaster. I want to acknowledge our indebtedness to Basic Books, Inc., for their cooperation in this matter.

risks giving support to "new" propositions which may have no more validity than did the myths that were current when the research program was initiated. I want to take this opportunity to acknowledge on the part of those who have an abiding interest in disaster research our thanks to Dr. Merton for his insightful commentary.

George W. Baker

30 November 1962

ACKNOWLEDGMENTS

This review of disaster studies is primarily indebted to the men and women who made the studies themselves. Going into difficult places and dealing with people under severe stress, these researchers set an example of social scientists making the real world their laboratory.

The Committee on Disaster Studies of the National Academy of Sciences—National Research Council, and its successor, the Disaster Research Group, played an indispensable role in supporting many of these studies, assembling them along with much other literature, and sponsoring a series of efforts to codify them and generalize from them, of which this report is one.

My own work was particularly helped by the warm cooperation of George Baker, Technical Director of the Disaster Research Group, and his staff.

The methods of analyzing and of theorizing about the disaster materials which I have applied were learned primarily from Paul Lazarsfeld and Robert Merton, through a combination of course work, project work, and participation in the common culture of the talented researchers at the Bureau of Applied Social Research, which they did so much to create. The socially critical tradition of Robert Lynd and of C. Wright Mills also contributed in its way to the analysis.

A. H. B.

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INTRODUCTION

This is one of those books which attempts something worth doing and accomplishes just what it sets out to do. It is hard to say whether this is more unusual in sociology than in other disciplines; I happen to think not. But it is rare enough and rewarding enough to deserve our close attention. In any case, the book is both an instructive review of the current state of knowledge about the social processes released by massive impacts upon social systems and a contribution to sociological theories of the middle range.

Dr. Barton does more than summarize existing knowledge about social responses to disaster; he codifies it. Although summaries and codification may at first look alike and although each has its own uses, the difference between them is profound. Summaries reproduce the essentials of the original content in short compass. They have the merit of remaining faithful to the original at the expense of adding nothing to it. They are simply devices for facilitating communication, alerting the reader to researches he will want to turn to and making it unnecessary for him to read researches which he learns are of no interest to him. Codification does more than compactly reproduce what is known. It creates new hypotheses, grounded in existing knowledge. It consolidates specific empirical findings into provisional empirical generalizations. And it tentatively derives these generalizations from a limited number of logically connected theoretical ideas. In short, codification collates, revamps, and consolidates what is found in the literature of a subject. The summary is the simple sum of its various parts; codified knowledge is the sum that, by ferreting out implied logical and substantive relations, is, truly speaking, more than the sum of its distinct parts.

The announced purpose of this methodological and theoretical codification of social research on disaster is to appraise the current state of our knowledge in this field. However adequate this might be as a statement of intent, I believe it wholly inadequate as a statement of accomplishment. By codifying rather than only summarizing that research, this book brings it to a new high plateau from which the next round of investigations can take off. Dr. Barton recognizes throughout that without the many though still too few investigations upon which he has drawn, it would of course not have been possible for him to develop and use the methodological and theoretical ideas

set forth in this monograph. He was able to reflect, at comparative leisure, about the sociological import of social responses to disaster only because these inquiries, many of them needing to be devised on the shortest of notice, had done the spadework. This is not the place to take the roll call of the social scientists who carried out these investigations; they are abundantly cited in the text and are assembled in the bibliography. In drawing upon these studies, the book is critical but never carping, methodical but not dully routinized, wide-ranging but not diffuse, imaginative but not irresponsible.

The reader will also find that this is a quiet book. There is nothing here of noisy claims to profound advances over what has gone before. There is no quick and unmerited insistence that complex problems have been swiftly brought to heel. It is all written in meas- ured, straightforward language; it is disciplined by cautious appraisals of the evidence now in hand. When, as must often be the case in this comparatively new field of investigation, Dr. Barton moves beyond the evidence, he tells us so. He reminds us of the greatly differing weight of the evidence for one or another generalization, and typically indicates just what new kinds of evidence are needed in order to enlarge our confidence in the tentative hypotheses which the original investi- gators and he, as the beneficiary of their investigations, have developed.

On occasion, Dr. Barton writes in the "of-course" mood (which the grammarians cannot really ticket as indicative, imperative, sub- junctive, or infinitive). It is the mood in which the author announces a familiar fact or idea, which must nevertheless be stated in order to lay the foundation for some other facts or ideas that are anything but familiar. In such cases, it is both a matter of simple courtesy to the reader and of self-protection for the author who does not enjoy the charge of dealing in commonplaces to indicate by a qualifying "of course" that he too knows the fact or idea to be unexcitingly familiar. In that way, he avoids the practice of Oliver Wendell Holmes' katydid who persistently says "an undisputed thing in such a solemn way." The of-course mood also keeps the author from flogging a dead horse, blowing down a man of straw or breaking through an open door, behav- ior that is as unpleasant as it is wasteful. Dr. Barton is also careful to avoid abusing the of-course mood. He does not smuggle in disputable statements with an ingenuous "no doubt" or a disarming "of course." Nor does he misuse the mood to legitimatize a platitude that need not be stated at all.

No doubt, it would be possible to summarize the content of this monograph, chapter by chapter and section by section. No doubt, too, this would be one way of introducing the reader to it. But a summary is not always the most appropriate introduction, particularly not for

a book with the many implications of this one. For this reason, I
shall not make the effort to compress what it says in so many words.
Instead, I shall single out those contributions to our understanding of
social structure, collective behavior, and social change which, as
one reader, I found of most value, knowing that other readers with
their distinctive interests will search out other aspects for themselves.
The rest of this introduction, then, is a dialogue, in substance though
not in form, between the author and one reader. More narrowly, it
is a quasi-dialogue in which Dr. Barton has had his say first and I
proceed to tell him what I have heard.

For this one reader, then, the book brings out, by luminous
example rather than by abstract precept, the reciprocal relations
between empirical research and theory in sociology. It shows that
the bearing of empirical research on sociological theory extends far
beyond the function of testing that theory by confirming or refuting it.
Social research on the phenomena of disasters is found to play a more
active role; it also initiates, reformulates, re-focuses and clarifies
the very theories which are utilized to interpret collective and organ-
ized responses to disaster. In this sense, the book identifies disasters
as a strategic research site for the development of selected sociolog-
ical theories.

In the same way, the book shows the bearing of sociological
theory upon empirical research. By doing so, it reminds us once
again that empirical research need not be equated with raw empiricism,
confined to descriptions of what is observed in terms of an implicit
and uncritically adopted conceptual scheme. In the course of codifying
social research on disaster, the book draws upon prior knowledge in
methodology or the logic of procedure, shows how general orientations
in sociology can be effectively employed, clarifies selected sociolog-
ical concepts, makes effective because disciplined use of post factum
interpretations, presents empirical generalizations about human behav-
ior under conditions of collective stress, and, finally, contributes to
selected theories of the middle range in sociology, theories in the
strict sense of logically interdependent sets of propositions.

Strategic Research Sites

Dr. Barton provides ample evidence that sociological theory
and research not only help us to identify and to understand what goes
on when disaster strikes but also that, conversely, the investigation
of these phenomena can extend the sociological theories of human
behavior and social organization far beyond the confines of disaster
situations. In this sense, collective disasters provide research sites

strategic for developing certain sociological theories. Conditions of collective stress bring out in bold relief aspects of social systems that are not as readily visible in the less stressful conditions of everyday life. As only one example, the behavior of men in disasters shows how much is ordinarily taken for granted in everyday life because the social organization keeps many potential conflicts between the social positions making up the status-sets of men from becoming actual conflicts. Ordinarily, time and energy can be allocated, substantially if not with maximum efficiency, among these statuses: in the workplace, the family, other organizations, and personal relations. But "a disaster breaks down this normal scheduling of status responsibilities by creating simultaneously urgent needs for many of these groups" (46). In disasters, we can identify the priorities of values assigned these several statuses and the processes which lead one status to be activated at the expense of others (47-49). As another example, the post-disaster behavior of members of the upper social strata, who come to feel relatively deprived as they see goods distributed equally and see differentials in income reduced by the rates of pay for rehabilitative work, exhibits "the potentials for conflict of an equalitarian norm of 'to each according to his needs' [when] introduced into a stratified society" (181).

It may at first seem ghoulish to describe disasters as affording a strategic site for sociological inquiry. Yet only the distraught or naive reader can distort this into the statement that sociologists hope for disasters in order to enlarge their knowledge. Just as it has long been recognized that the casualties of war enable medicine and surgery to advance knowledge and funded skills which can be used in peacetime, so war and other disasters provide a basis for new sociological knowledge that can be applied not only to cope with future disasters but the better to understand the workings of human behavior and social organization under less stressful conditions. To learn from disasters is not to act the ghoul and advocate them.

Methodology

In another of its aspects, this book provides an excellent specimen of using methodological principles to arrive at a critical inventory of social research upon a particular subject matter. For Dr. Barton does not merely write about methodology. He puts it to use in codifying the substantive researches on disaster. Only a few of his many examples of this use may be enough to show that the same kind of methodological analysis could be employed to good advantage in codifying other bodies of sociological knowledge.

Consider first the instructive examination of various types of qualitative and quantitative researches on disaster, and their mutual interrelations. Qualitative-descriptive studies serve to identify and to classify kinds of individual and collective behavior under conditions of disaster. From this work, there can develop qualitative-analytical research which provisionally sets out explanatory hypotheses for investigation and quantitative-descriptive research which counts and measures the properties of behavior and social organization previously identified in order to make the hypotheses about their relations specific enough to be tested. Quantitative-analytical research proceeds to this kind of test by systematic analysis of uniform relations, under specified conditions, between the properties and variables that have been identified and measured (8-9).

By indicating their respective methodological functions, Dr. Barton wisely refuses to be drawn into the mock battle which sets qualitative analysis in opposition to quantitative analysis. Nor does he escape to that bland and perfunctory line of retreat which holds that there is some good in every method. Instead, he gets down to cases and shows how each type serves its distinctive functions in sociological inquiry. Moreover, he shows that particular investigations often combine these several methods in dealing with the same data, being quantitatively-analytical, for example, in their study of the behavior of individuals within one community and qualitatively-descriptive or qualitatively-analytical in their study of the structural properties of the community. His classification of social researches on disasters in these terms thus helps us all to see the strong and weak spots in accumulated research and provides one basis for locating the distinctive types of investigation which are most needed at this juncture (10). The entire procedure, as I have suggested, could be fruitfully adapted to organized assessments of research in other fields of inquiry.

Adopting the same kind of logical procedure, Dr. Barton develops a typology of situations of collective stress, citing the investigations that have dealt with specimens of each type (6). And once again, we can see almost at a glance the kinds of collective stress that have been investigated in some depth, those that have been only thinly studied, and a substantial number of types that have not been examined at all. This is no mere taxonomy of collective-stress situations for its own sake. Nor is it the kind of typology that at best helps the research librarian to classify monographs on the subject. It has far more significant value. By systematically identifying the diversity of disaster situations, the typology alerts us to the limits that must be placed upon generalizations based upon the results of investigations dealing with only certain types of disasters (125, passim). It provides a safeguard against raw empiricism in which observed uniformities are reported without indication that they hold only under specified conditions.

Just as Dr. Barton methodically works out the types of investigation found in social research on disaster and the types of disasters, so he makes effective use of typology of variables employed in this research. Chiefly in Chapter 2, he treats variables that are used to characterize individuals in a community: their attitudes and beliefs, role-competence, motivation for role-performance, place in networks of social relations, etc. This is instructive enough. But the analytical power of an apt typology of variables becomes most apparent in Chapter 4, where he deals systematically with four types of structural properties of organizations and communities. There is no need for me to remind the sociologist-reader of what is meant by additive, distributional, relational, and integral properties, and other readers can quickly find this out by turning to the text (130-131). What should be emphasized is the analytical value of this classification of variables demonstrated when Dr. Barton develops his network of substantive propositions about the processes making for altruistic norms and altruistic behavior under specified conditions of community disaster. I shall return to these propositions later, but even if it were possible to condense this portion of Dr. Barton's analysis into a few lines, I would not rob the sociological gourmets who read this book of the pleasure of slowly savoring the delicacies of analysis served up in Chapter 4 (132-161). It is enough to say only, by way of anticipation, that by systematically employing these types of variables Dr. Barton develops models of analysis that make provisional sense of otherwise paradoxical findings and that show how the interrelations of countervailing social processes produce unanticipated consequences. Tentative as they must be at this point, these pages are a model of analysis, both in the neutral sense of methodology and in the appreciative sense of deserving emulation.

Out of the many other methodological canons governing this book, I find one particularly congenial because it has long seemed to me of prime, though often neglected, importance for sociological analysis.[1] This is the canon that indicates when analysis should be in terms of relative proportions or rates of a population engaged in particular behaviors or exhibiting particular attitudes, and when in terms of their absolute numbers. The same proportions of people in social strata, groups, and communities of vastly different size will set differing social processes in operation if only because they involve greatly different numbers of people. From the standpoint of effects upon the society, it is often the absolute numbers and not the comparative proportions that matter.

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[1]Merton, R. K. Social theory and social structure. Glencoe, Ill.: Free Press, 1957. Pp. 174-175, 312-313, 411.

Sociological investigations of disaster have repeatedly shown this to be the case. When dealing with the output of services provided the victims of disaster, it is the absolute number of relief workers that matters, not the comparative percentages of the relatively small population directly in the impact area and the relatively large population outside it (79-82). Dr. Barton advances this formal distinction between proportions and absolute numbers into an intriguing substantive hypothesis that deserves repetition here:

> Interest [in the disaster] among people within the community is perhaps more closely related to the proportion of victims than to their absolute numbers, since this determines the proportion of people who have some direct tie to those affected. Interest of people in more remote places may be more related to the absolute number of victims. Empirical inquiry might establish a law of this sort: the size of headlines and number of words devoted to the story is directly proportional to the number killed and inversely proportional to their [social] distance from the audience (134). [2]

Dr. Barton also indicates the importance for adaptive behavior of a related distinction between the absolute number of people with disaster-relevant skills in a population and their distribution, spatial and organizational, within the community. Here, it is a matter not of numbers merely but of their functionally relevant distribution. The same number of skilled personnel will be variously effective according to whether they are heavily concentrated in one area or one organization or are functionally distributed at strategic places throughout the community. This is a difference that can make much difference in the extent of adaptive behavior (86).

By thinking through and stating the assumptions on which he worked up the data and findings of a wide range of studies, Dr. Barton has shown anew how competence in methodology makes for clarity of theoretical formulations and adequacy of substantive investigation.

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[2]There may be some interest in linking this hypothesis with the findings by P. A. Sorokin et al., An experimental study of efficiency of work, Amer. J. Sociol., 1930, 35, 765-782.

General Orientations

Just as Dr. Barton puts methodological canons to effective use, so he shows the distinctive uses of general orientations in sociology, when these are properly employed. The effective use of these orientations requires that they be recognized for what they are. They must not be confused with theory in the strict sense. For, as I have had occasion to note before, the theoretical structure of sociology, like that of other scientific disciplines, is unevenly developed. Much of what is loosely described as sociological theory turns out upon close inspection to be rather general orientations which only suggest the types of variables that are somehow to be taken into account in the effort to understand social behavior, the structure of society, and changes in that structure. Unlike general orientations, theory consists of sets of interdependent and verifiable statements of relations between specified variables. The general orientation is a preliminary to theory rather than theory itself.

To make this distinction is not, as some have supposed, to downgrade the importance of general orientations in sociological inquiry. Far from it. After all, much of the lasting significance of the work by such giants among sociologists as Durkheim and Weber resides in their use of general orientations. Consider only the enduring significance of Durkheim's notion, exaggerated though it is, that "the determining cause of a social fact should be sought among the social facts preceding it." Oriented by such a general idea about the order of data that are to be taken as relevant, later sociologists have had less groping to do as they approached new problems of investigations. We need only dip into Dr. Barton's book to find many examples of the disciplined use of such general orientations.

To begin with, Dr. Barton's orientation in this work is, as he says, "sociological rather than psychological" (17). Throughout, he tries to analyze the workings of social systems under stress rather than to reconstruct the psychic processes of individuals collectively subjected to stress. Of course, Dr. Barton unavoidably makes psychological assumptions—for example, about the processes of selective perception and of identification, in the sense of associating oneself closely with a person or group. But these are not the matters he takes as problematical and therefore requiring analysis in this book. Instead, the focus is upon the social environment of individual behavior and the social processes involving the relations between men and groups of men under the special conditions of acute and, occasionally, of chronic stress.

This theoretical commitment leads Dr. Barton to attend throughout to the ways in which the structure of social relations existing in a

community exercises constraints upon the range of alternative behaviors that can realistically be expected. In cases of disaster, for example, the socially induced involvement of people with their families exercises a constraint upon the motivation of members of relief organizations to fulfill their organizational role, for this depends upon the situation of their family or their knowledge about that situation (120). Dr. Barton is here employing that general idea in functional sociology which holds that the elements of a social system are not infinitely malleable but that change in each element is constrained by its interdependence with others in the system. He recognizes that the concept of structural context arms the functional analyst against strictly utopian thought. In this way, he escapes the kind of utopianism that comes from looking at social problems piecemeal and assuming that each can be individually settled without reference to the limitations imposed by the structural context. As he puts it in one case, "the problem is to maximize output within the (crudely indicated) system of constraining relationships" (120).

Another general orientation in the book leads to the continued distinction between individual motives and intent, on the one hand, and normative constraints and consequent behavior on the other. This is a distinction of prime importance for the interpretation of human behavior and it is one which often becomes lost to view in common sense explanations of why people behave as they do. In everyday life, the motives of men are often taken to determine their behavior and this leads to the further assumption that the motive can be read from the behavior. Thus, centuries-old discussions have commonly seen altruism and sympathetic conduct as the product of human nature, in which sympathy is deeply rooted as a trait. But as Dr. Barton reminds us, "people are moved not only by individualistic emotional responses, but by feelings of moral obligation which may reinforce or substitute for personal emotions in motivating action in conformity with norms" (155). The normative standards in a community, the rules of right conduct, vary, and as they vary, the frequency of altruistic behavior under conditions of collective stress will also vary. To recognize this is to turn from the naive tendency to divide people into those with good motives and bad and then to aggregate their numbers in order to arrive at the probable frequency of altruistic and selfish behavior under pressure. Differences in the motives characteristic of different men can of course make for differing behavior but, as Dr. Barton shows us anew, men with much the same motives will behave differently as the normative structure of their groups differs.

In much the same way, the motives of behavior must be clearly distinguished from its social consequences. Studies of disaster have abundantly demonstrated the problems brought about by "mass convergence," the movement of large numbers of people toward (rather

than, as might be supposed, only away from) the disaster area. Masses of people moved by curiosity or intent on helping, often create conditions which reduce the measure of help that can be given. The wish to "do something" may release the crisis-induced personal motivation but does not create the trained capacity to do something that is genuinely helpful. The attempt of people to engage in roles for which they are unprepared produces the self-defeating exercise of good will. For good will that is unorganized in functionally organized roles produces the random behavior that interferes with the adaptive behaviors that are being mobilized. At first glance, this may seem to be nothing more than the sixteenth-century proverb, resurrected by Karl Marx in his Capital, which reminds us that "the way to Hell is paved with good intentions." But, as is often the case, the first impression is a misleading one. For like other proverbs and maxims, this one simply states a familiar pattern of experience without the bother of going on to say when this pattern occurs and when it does not. Short, neat, and easily recalled, the proverb appeals to that common sense which is unmindful of the conditions necessary for the pattern to occur and unconcerned with the occasions on which it does not. It is purest empiricism, with all its charms and dangers. Dr. Barton's analysis, like others that dig beneath the empirical surface, shows us when good intent produces bad consequences and how it does so. He shows how personal motivation without appropriate social organization defeats intent. In short, motive and outcome are connected, but the one does not necessarily predict the other. How to harness these motives, once they are activated, to effectively organized efforts remains one of the principal problems, as we see from the account of emergency social systems that develop after great disasters.

This leads to another general orientation adopted in studies of disaster, one that calls for investigation of the connections between collective behavior and the behavior of organizations. Both deal with social behavior, in the sense of behavior oriented toward other human beings in one or more of their social statuses. But the social interactions of crowds and mobs, of masses and publics, are of quite a different kind from the coordinated interactions of men performing their roles as members of formal organizations. Adopting this distinction and drawing upon studies of disaster, Dr. Barton can tentatively trace out the complex relations between the two (77, 112-118). In doing so, he converts a general orientation into a series of specific hypotheses. The hypotheses are congruent with the general orientation, but since this is not a strictly formulated theory, they are not logically derived from it.

In making use of general orientations, Dr. Barton shows by example that sociological inquiry can proceed a considerable distance

without waiting upon strict formulations of theory. He thus avoids the exaggerated emphasis upon precision, at all costs, that is characteristic of the novice who holds hard and fast to the rules he has learned from textbooks on scientific method. His is not the premature rigor that makes for rigor mortis of inquiry. His aim, understandably enough, is to move toward rigorous derivation of hypotheses from precisely stated theoretical premises. But he recognizes that it is often necessary to move toward this objective through a phase in which general orientations provide a measure of guidance if not strict direction.

Analysis of Sociological Concepts

Dr. Barton's overview and the studies on which it draws bring out repeatedly the importance in theorizing of what I have described as the "respecification of a concept" or as "reconceptualization." Established terms and concepts are re-analyzed in an effort to detect pertinent but previously implicit meanings that guide the observation of significant aspects of phenomena. Time and again, advances in inquiry have resulted from such respecifications of concepts. In many of these instances, a considerable effort was required to see the familiar in unfamiliar, but instructive, ways. To consider only one classic example, in his study of suicide rates, Durkheim took the concepts of climate and temperature, which at first seem exclusively meteorological concepts, and converted them into sociological ones. The summer months were construed, not only as periods of comparatively high temperature, but as a time in which the days are longer and so provide occasion for a more active social life, in the midst of which a feeling of social isolation can more readily emerge (the feeling of being lonely in the crowd). It will be remembered that this respecification enabled Durkheim to test his theory that rates of suicide vary with seasonal, monthly, and even daily variations in rates of social interaction.

In much the same way, sociological studies of disaster have respecified concepts to make newly explicit the character of data subsumed by them. For one example, they consider natural disasters in terms of the extent to which they impinge upon people at every status: rich and poor, young and old, heathen and properly religious. "Danger, loss and suffering become public rather than private phenomena. This feature gives disaster the characteristics that distinguish it from other forms of crisis" (Charles E. Fritz[3]; cf. the further observations, (141-142). In this and comparable formulations, the concept of disaster

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[3]Disaster. In R. K. Merton & R. A. Nisbet (Eds.), Contemporary social problems. New York: Harcourt, 1961.

is treated in terms of social structure and not merely to refer to events making for collective stress. And much of the ensuing inquiry into the differentials of impact upon various sectors of a local society follows from this respecification.

The concept of disaster as a sudden and acute form of collective stress in contrast to chronic suffering directs attention to the high visibility of these episodes and the social consequences of this visibility (60-62). As Dr. Barton asks, "Why, for example, is Harlem not defined as a disaster, worthy of a mass therapeutic response?" (132-133). Chronic forms of collective suffering come to be taken for granted and are largely "invisible" to many in the society; the lives of many of the poor in slums, migrant farm laborers, and dispossessed farmers are cited cases in point. As these problems slowly develop, they produce scarcely noticeable differences. But disasters are highly visible, either at firsthand or by published report, and the sudden change in the condition of many men provides the basis for eliciting both interest and sympathy among the rest. Acute and chronic distress induce sociologically distinct processes, in part because of these differences in visibility.

It is not only in scientific inquiry, of course, that the language of concepts tends to fix our perceptions and, derivatively, our attitudes and behavior. At least since the work of Whorf (and, for that matter, of those who have criticized him), we have become aware that the connotations of the words we use help define situations for us. We are apt to respond accordingly. Striking instances of this pattern of "language determining action" are provided by studies of disaster (chiefly in the work of Form and Nosow[4]). It was noted, for example, that newly established hospitals and first-aid stations in disaster areas were often ignored, "'that cars loaded with victims drove right by,' (and) that the services were under-utilized." In part, this happened because "first-aid stations" were defined, by connotation, as inadequate to the needs of seriously injured people who should be taken, instead, to a "real hospital" (117). This determination of behavior by terminology points directly, as Dr. Barton observes, to the need for "grade-labelling" stations for aid so that it is more immediately clear just what kinds of assistance can be provided there. Like Whorf's gasoline drums that are labelled "Empty" and so lead people to become careless about smoking in their vicinity, even though in fact these "empty" drums are the more hazardous because of their explosive vapor, so the reference to "first-aid stations" leads them to be ignored by those

[4]Form, W. H., & Nosow, S. Community in disaster. New York: Harper, 1958.

seeking care for the seriously injured. The importance of specifying the meaning of conceptual language is thus doubly exemplified in this book: both for the behavior of the students of disaster and for the behavior of those involved in disasters.

There are many more instances, in this volume and the research upon which it is based, of conceptual clarification leading to instructive formulations of hypotheses about the operation of social systems under stress. For the reader interested in seeing this aspect of sociological analysis close-up, it may be enough to cite a few of these: the instructive use of the distinction between leaders in local organizations who hold their positions by "ascription," by virtue of other statuses, or by "achievement," by virtue of specific role-competence (38-39); the differing behavior of people in three types of "identification groups" and "membership groups" (66); the concept of "overloads" of social demands for role-performance (44, 92); the concept of "dis-identification" or the disengagement from once accepted responsibilities (140-141); and the concepts of the "emergency social system" (19-20; 74-75, passim) and the "restorative social system" (125). Each of these concepts must of course be judged by whether it earns its keep as a component of theoretical and empirical inquiry; whether it serves to uncover new regularities in human behavior and social organization. This monograph shows that in some cases they do their job and, in others, that they might. But in every case, they direct us to aspects of human behavior under conditions of collective stress that might otherwise be overlooked at the expense of beginning to understand that behavior. The reader will find, I believe, that each new concept or respecification of an established concept advances our understanding of the impact of disasters upon social systems.

Sociological Theories of the Middle Range

Although it may not have been Dr. Barton's intent, his monograph provides an instructive case in point for the current discussion in sociology of the place of comprehensive theory and of theories of the middle range. When we get down to cases of actual sociological inquiry reported in this book, rather than continue to discuss only what might someday come to pass, we can put the question directly: Have sociologists evolved a comprehensive theory from which we can derive the many regularities tentatively identified in this book? To ask the question is almost to answer it: If there is such a comprehensive theory, it has yet to be found and used by sociological students of disaster.

This current deficiency does not mean, of course, that in principle no such encompassing single theory can be developed, a theory adequate to the task of deriving, as special cases, the many empirical generalizations set forth in this monograph as well as a larger number of other generalizations about human behavior and social organization. Only those who have learned nothing from the history of thought will blandly identify what exists with what can exist, just as those who have learned nothing from the history of thought will casually assume that the sort of theory which does not exist is necessarily the only kind that should be made to exist. Since so much sociological ink has been spilled in the debate over the current place of comprehensive theory and theories of the middle range, it may be helpful to examine anew the understandings and misunderstandings that have been caught up in this debate. Although this is something of a digression, it may help us to locate the kind of theorizing developed by sociological students of disaster.

Item: Unlike single systems of sociological theory, it has been said, theories of the middle range represent low intellectual ambitions. They require us to abandon our intellectual heritage of lofty aspirations. No one has expressed this misunderstanding with more eloquence than Robert Bierstedt, when he writes:

> We have even been invited to forego those larger problems
> of human society that occupied our ancestors in the history
> of social thought and to seek instead what T. H. Marshall
> called, in his inaugural lecture at the University of London,
> 'stepping stones in the middle distance,' and other soci-
> ologists since, 'theories of the middle range.' But what an
> anemic ambition this is! Shall we strive for half a victory?
> Where are the visions that enticed us into the world of
> learning in the first place? I had always thought that soci-
> ologists too knew how to dream and that they believed with
> Browning that a man's reach should exceed his grasp. [5]

From this, it might be supposed that Professor Bierstedt would prefer to hold fast to the sanguine ambition of developing an all-encompassing general theory rather than accept the anemic ambition of middle-range theory. But the inference would apparently be mistaken. For Professor Bierstedt goes on to say that "In my own opinion one of the greatest pieces of sociological research ever conducted by anyone is Max Weber's The Protestant Ethic and the Spirit of Capitalism" (Ibid., p. 7). I do not question this appraisal of Weber's monograph

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[5]Bierstedt, R. Sociology and humane learning. Amer. sociol. Rev., 1960, 25, 3-9, at 6.

for, like many other sociologists familiar with the body of criticism that has grown up over that work, I too continue to regard it as a major contribution. But I do find it hard to reconcile Professor Bierstedt's appraisal with his rhetoric that would banish theories of the middle range as sickly pale and singularly unambitious. For surely, Weber's monograph on the Protestant Ethic provides a prime example of a theory of the middle range; it deals with a delimited problem, exemplified in a particular historical epoch; it employs a limited theory of the interrelations between religious commitment and economic behavior; and it contributes to a somewhat more general theory of the ways in which social institutions are interrelated. Is Weber therefore to be indicted for anemic ambition or emulated in his effort to develop an empirically grounded theory of delimited scope? Some sociologists have chosen the second of these alternatives in their own work, preferring not to re-enact the role of a Balaam, who comes to curse and remains to praise.

Item: In Professor Bierstedt's observations also is something more than a hint that the notion of theories of the middle range is remote from the aspirations of our intellectual ancestors and, in this degree, comparatively new and alien to us. But as I have noted before,[6] a general conception corresponding to that of theories of the middle range is not new. Though differing with Bacon on the connections between "most general laws" and "middle principles," J. S. Mill nevertheless echoed him in affirming the value of middle principles in every science.[7] And Bacon, who more than anyone before him emphasized the prime importance of "middle propositions" in scientific inquiry, in turn cites Plato to the same effect.[8] No more than anything else, need ideas be glorified simply because they have attained a ripe old age. After all, we are free to ignore the hallowed patina which, in some quarters, covers and protects any theory created more than a century ago. But if ideas need not gain authority with the passing years, neither need they be discredited simply because they have been moribund for a time and are only later brought back to mind. What Bacon saw as a needed emphasis for inquiry in the science of his day is a distinctly needed emphasis in the sociology of today, where concepts and classifications play such a major part, while theoretically derived and empirically established uniformities are conspicuous for their rarity.

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[6]The role-set: problems in sociological theory. Brit. J. Sociol. 1957, 8, 106-120, at 108.

[7]Mill, J. S. A system of logic. London: 1865, 454-455, passim.

[8]Bacon, Francis. The advancement of learning. In B. Montagu (Ed.), Works, 1825, Vol. II, 177, 181, passim.

Item: At least one critic has succeeded in so mis-reading the case for theories of the middle range as to make of it a proposal for settling all the difficulties that attend contemporary sociological theory. After reporting that he is not "very happy" with these formulations, and conceding that "most of the works of Marshall and Merton do display the kind of concern with problems which I am here advocating," Dahrendorf goes on to explain:

> My objection to their formulations is therefore not
> directed against these works but against their explicit
> assumption (sic) that all (sic) that is wrong with recent
> theory is its generality and that by simply (sic) reducing
> the level of generality we can solve all (sic) problems.[9]

However human the yearning for a panacea, it is really going a bit far, even for one who suffers from this human failing, to father the wish upon others. It would only be tedious to quote all the evidence attesting the contrary view that was actually expressed, but perhaps a small sample will serve.

> In emphasizing what seems to me the distinctive impor-
> tance of theories of the middle range, I would prefer not
> to be misunderstood. There is, of course, no contra-
> diction between such theories and more comprehensive
> theory, such as that advanced by Parsons. Nor am I
> suggesting that only theories of the middle range merit
> our attention. . . There is no substitute for such efforts
> as Parsons's to develop a wide-ranging and comprehensive
> theory of the social system as a whole, which will incor-
> porate, with successive modifications, more highly
> delimited theories. But, by the same token, there is
> room also for another kind of theorizing which is, at the
> outset and for some time to come, limited to more
> restricted ranges of phenomena than those encompassed
> by a system of thought like that of Parsons. The two
> kinds of inquiry can usefully follow their own course,
> with periodic reconnaissances to see to what extent

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[9]This extraordinary version of what can be checked in easily available sources will actually be found in Ralf Dahrendorf, Out of Utopia: toward a reorientation of sociological analysis. Amer. J. Sociol., 1958, 64, 115-127, at p. 122-123.

specific theories of a limited range of phenomena are
found to be consistent with the theory of larger scope.[10]

Item: It has been suggested that theories of the middle range
may splinter the field of sociology into unrelated specialties.[11] That
such tendencies toward fragmentation in sociology can develop is best
shown by the fact that they have developed. But this is scarcely a
result of working toward theories of intermediate scope. On the con-
trary; as I have tried to show for the case of reference group theory,
such theories of the middle range can consolidate, not fragment,
empirical findings drawn from such seemingly disparate fields of
human behavior as military life, race and ethnic relations, social
mobility, delinquency, politics, education and revolutionary activity.[12]

For these misunderstandings of the notion of theories of the
middle range we have had to go far afield. But if we want to under-
stand the use of this type of theory,[13] we can turn once again to the
monograph for cases.

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[10]The role-set, op. cit., 108-109. See also Social theory and social
structure, pp. 9-10. As for Dahrendorf's remark that the "con-
vergence" of theory and research is suspect because "'convergence'
is a very mechanical notion of a process that defies the laws of
mechanics," this will be recognized as remarkably close to the
practice of putting one's free associations in print. Why the inno-
cent word, 'convergence,' so long a part of the vernacular as well
as of anthropology, biology, mathematics, and physiology, should
conjure up only an association with the "laws of mechanics" is a
question that can only be answered by psychological analysis.

[11]Francis, E. K. Wissenschaftliche Grundlagen Soziologischen
Denkens. Bern: Francke. Verlag, 1957, 13.

[12]Social Theory and Social Structure, pp. 278-280; also pp. 97-98.

[13]Instructive discussions and examples of theories of the middle range
in social science include: Armand Cuvillier, Sociologie et Problèmes
Actuels, Paris: Librairie Philosophique J. Vrin, 1958; Joseph
Bensman and Arthur Vidich, Social theory in field research, Amer.
J. Sociol., 1960, 65, 577-584; Robert Cooley Angell, Free society
and moral crisis, Ann Arbor: University of Michigan Press, 1958,
226 ff.; L. R. Klein, Keynesian theory and empirical inquiry: A
note on "Middle-Range" formulations, in Mirra Komarovsky (ed.),
Common frontiers of the social sciences, Glencoe: Free Press,

Dr. Barton's monograph employs and in part extends certain sociological theories of the middle range; for example, the theory of reference groups and relative deprivation, role-conflict, the formation of social norms and collective responses to anomie. Such theories, of course, entail abstractions, but abstractions close enough to the data of sociological observation to permit empirical test. They are theories about delimited aspects of social phenomena, as is indicated by their labels. One speaks of a theory of reference groups or a theory of role-conflict just as one speaks of a theory of prices, a germ theory of disease, or a kinetic theory of gases. In all of these, a basic set of ideas gives rise to inferences which can be put to the test of systematic observation. As more and more of these implications are drawn from the original set of ideas and are empirically confirmed, there emerges what might fairly be called a theory of the middle range: a theory adequate to account for selected aspects of a specified range of phenomena and subject to being consolidated with others of like kind into a more comprehensive set of ideas.

Such theories often enable us to anticipate phenomena which are at odds with common sense expectations, that is, with expectations based upon an undisciplined and unexamined set of self-evident assumptions drawn from everyday experience. It is only a matter of common sense, for example, to believe that the greater the loss experienced by families in a disaster, the more they will feel deprived. This belief is based on the unexamined assumption that the magnitude of objective loss is directly and linearly related to the subjective appraisal of the loss; that the appraisal is a purely personal one. But the theory of relative deprivation leads to quite other expectations. In this theory, self-appraisals are seen as depending upon people's comparisons of their own situation with that of other people perceived as being of the same kind. The theory therefore leads us to anticipate that, under certain conditions, families suffering serious losses will feel less deprived than those suffering smaller losses; if, for example, they are in situations leading them to compare their own lot with that of people suffering even more severe losses. And it is people in the area of greatest impact of a disaster who, though themselves substantially deprived, are most apt to see about them others who are even more severely deprived. Actual inquiry into the matter produces findings

13(cont.)
1957, 383-390; James M. Beshers, Models and Theory Construction, Amer. sociol. Rev., 1957, 22, 32-38; George A. Hillery, Jr., Toward a Conceptualization of Demography, Soc. Forces, 1958, 37, 45-51; Frank R. Westie, Toward Closer Relations between Theory and Research: A Procedure and an Example, Amer. sociol. Rev., 1957, 22, 149-154.

that are at odds with common sense expectations and in approximate accord with the theory of relative deprivation; "the feeling of being relatively better off than others increases with objective loss up to the category of highest loss" (62-63; for a detailed summary of the theory in application to this type of situation, see 70-72). This pattern may be reinforced by the tendency of public communications to focus on "the most extreme sufferers (which) tends to fix them as a reference group against which even other sufferers can compare themselves favorably" (140). In short, when few are hurt to much the same extent, the pain and loss of each seems great; where many are hurt in varying degree, even fairly large losses seem small as they are compared with far larger ones. And these self-appraisals affect the distribution of morale in the community of survivors and their motivation to help others.

In much the same fashion, Dr. Barton uses a still-primitive theory of role-conflict to suggest mechanisms for reducing the degree of conflict people experience in their family roles and their organizational roles under conditions of disaster. I need not summarize these mechanisms here, for the reader will find an apt summary in the text (100-101). It will be seen that this amounts to little more than isolating the situational factors that ordinarily accentuate a conflict of roles and so organizing things that these factors appear only minimally or not at all. The essential point here is that even this primitive set of ideas, not far removed from description and so only the beginning of a theoretical construction, is enough to show that conflicting allegiances are not fixed once and for all but will be variously called into play as specified aspects of situations vary.

The use of middle-range theory to consolidate generalizations about behaviors that superficially seem wholly unrelated is exemplified by Dr. Barton's application of the theory of social structure and anomie. He notes three types of disaster-roles which have in common "strong motivation along with inadequacy of the socially provided means for achieving the goal" (22-23). Having in hand a limited sociological theory about this composite of intense motivation and a restricted opportunity-structure, he can identify the types of response-patterns to be expected under the special social conditions induced by disaster.

One final example must suffice to indicate how theorizing in the middle range enables Dr. Barton and the other sociologists he cites to work out a set of propositions that provisionally account for uniformities of behavior observed under conditions of disaster. These are propositions intermediate between a general theory of social systems, which is too remote from the facts of the case to account for what is observed, and mere description, which does not generalize at

all. The question to which Dr. Barton and the others address them-
selves is this: "Why do some situations of large-scale human suffering
generate a high rate of supportive behavior toward the victims, while
others do not?" (132). This is converted into the theoretical problem
of the formation of social norms, in this special case, norms calling
for altruistic behavior. Making use of a limited number of concepts
and of empirical generalizations tentatively identified in sociological
studies of disaster, Dr. Barton sets out thirty-five general propositions
(134-162). These are more than a miscellany of ad hoc propositions,
each unrelated to the rest; they comprise a set of logically related
propositions in which any one can be derived from combinations of
some of the others. The conceptual components of these propositions
are drawn from accumulated sociological theory; the empirical refer-
ents have in varying degree been established by investigation. If this
is a way-station on the road to more comprehensive theory, it is one
which moves us ahead rather than requiring us to remain engrossed
in debates over all-encompassing systems of sociological theory that
have yet to guide us to determinate solutions of problems such as
these. This book testifies anew that we need not wait for the most
general problems of sociological theory to be solved before making
headway on specific problems. Evidently, we can do worse than follow
the advice with which Durkheim concludes his classic study, Suicide:
"The important thing is not to draw up in advance a plan anticipating
everything, but rather to set resolutely to work."

                                        Robert K. Merton
Columbia University
September 1962

CHAPTER 1

THE NATURE OF DISASTER RESEARCH

For the last twenty years we have been accumulating social research on disasters, in the sense of situations of large-scale destruction of life and property. The journalistic and historical accounts of course go back to Pompeii—or to the Ark. We now have a great many qualitative descriptions of how people and groups behave in disasters, a handful of quantitative studies based on surveys or officially gathered statistics, and several articles and monographs summarizing special aspects of disaster. It now becomes possible to attempt to organize the findings somewhat, to examine the methods which have been used in obtaining them, and to relate them to that collection of concepts, general notions, and clusters of propositions which constitute social theory today. This study is one of a number which attempt such an organization and evaluation, from different viewpoints. Its primary concern is to bring together findings about the behavior of individuals, of masses, and of organizations into an analysis of the operation of social systems under stress.

The analysis will center on the impact of sudden disaster and that period of hours, days, or weeks in which the system must deal with emergency needs for rescue and relief. It will consider the problems of role expectations and knowledge in a disrupted social system; the forms of mass behavior in disaster including especially the mass outpouring of help; the effectiveness of formal organizations in disaster; the relationship of organizational to mass behavior; the problems of coordinating organizations; and some problems of social and ideological conflict in the restoration period.

Certain problems have been thoroughly covered elsewhere: the organization of warning systems and public response to warnings (Fritz & Mathewson, 1957); the conditions for mass panic (Quarantelli, 1960); attitudes toward preparedness for disaster (Williams, 1956); and the problems of evacuation and emergency shelter (Raker, Wallace, Rayner & Eckert, 1956). These will not be reviewed here. Neither will I deal with problems of long-run reconstruction after major disaster and of long-run social effects, which have been little studied. It is well known from studies of voting behavior and social history that great crises leave behind major psychological effects within the

generation which experiences them and institutional changes which remain still longer. The social wounds left by the French Revolution, by the Civil War on the South, by World War I on western Europe, by the Depression on American society, by the German slaughter of the Jews were major and long-lasting. If we are interested in the possible effects of very large scale disasters such as those caused by atomic warfare against national populations, we will have to work on the historical as well as the social-psychological time-scale. Here, however, only the short-run response to disaster is under consideration.

Social scientists' present concern with disaster has its practical as well as its theoretical interest. Modern democratic societies are committed to the application of science to reduce suffering of all kinds, including that resulting from natural disasters. At the same time the application of science to warmaking has so multiplied the destructive power of weapons that a major war today is essentially a gigantic mutual disaster. One main motivation for today's disaster research is obviously to find out in advance the likely consequences of such a war. Disaster research has practical implications for the study of atomic war as an instrument of national policy.

The chapters which follow will be based mainly on studies of community disasters, but at various points I will speculate about the effects of the scale of disaster on the processes which have been observed. We must be cautious in projecting small-scale phenomena directly to larger systems. Just as the community is not just "one man writ large," neither is a national society just one big community. There are emergent characteristics in systems which must be considered on their own level. Systematic model building, rather than easy analogizing, is the only way to understand large systems. The study of community response to local disaster is still in its infancy. More cases need to be studied, illustrating varied conditions, with more precise methods before we can claim to have a theory of community disaster behavior. A theory of national disaster requires both a well-developed knowledge of community disaster behavior and an analysis of the national social and economic system. The analysis here should suggest lines of further inquiry on both levels.

To begin an examination of recent disaster research, it is useful to classify the studies. One basis for classifying them is of course the type of disaster situation studied. By specifying the attributes of disaster situations we can make important distinctions among them, and also relate them to other social phenomena such as chronic social problems or gradual social trends. A second aspect of the studies is their methodology: what designs, samples, data-gathering techniques, and modes of analysis have been used? Closely related to this is the

nature of the findings of disaster research—to what extent are they facts repeatedly verified by reliable methods, reasonable estimates based on a few observations, or simply plausible (or implausible) hypotheses? Finally, what problems have been investigated—which behaviors, of which units, have the studies tried to describe or explain?

Types of Collective Stress

Disaster is part of the larger category of collective stress situations. We shall define a collective stress as a large unfavorable change in the inputs of some social system.

The term social system can be applied to collectivities ranging from enduring small groups, like a family, all the way up to national societies or a world social system. Between these extremes, the system may be any more or less socially integrated, ongoing collectivity—a geographical unit such as a neighborhood, small community, city, or region, or a social unit such as an organization, an ethnic group, or a social or economic class. Here we are primarily concerned with intermediate units such as organizations, communities, and regions.

The inputs of a social system include its physical environment, its external economic relationships, its external power relationships, and its sources of personnel. The physical environment may change for the worse through floods, storms, explosions, droughts, plagues and the like. Economic inputs may fail due to loss of markets or suppliers, or through breakdown in the system of exchange. External power relationships may become unfavorable through conquest, persecution, or the rise of competing powers. Recruitment of personnel may fail due to changes in the belief systems of the underlying population, the migration of the supporting population elsewhere, a deficiency of births, or an excess of deaths. We distinguish these externally caused collective stresses from internal social conflicts; while these have some similar consequences, their origin, ongoing processes, and resolution are quite different. Attention in such cases focuses primarily on resolving the conflict.

Stress on a large system naturally affects the smaller units which make it up. A smaller unit can thus be studied under stress limited to that unit, or within the context of a much larger stress situation. We can study "family stress situations" and "families in community stress," "community stress" and "communities in national stress situations." Some things will be the same regardless of the

larger context, and others will be different according to the total scope of the stress. It is important to distinguish the focus of the particular study from the total scope of the collective stress situation.

Collective stress situations can be distinguished also by their time dimensions. These include the speed with which an unfavorable change develops, and the duration or frequency of recurrence of the external change. Changes coming without warning are likely to create greater loss, and leave the social system with less capacity to respond to the loss. If the change is gradual or predictable in advance, specific preparations to prevent or respond to the damage are much more likely to be made. If the impact is long-continued or recurring, as in a lasting depression, drought or the wartime bombings, long-range social adaptations can be worked out, either to minimize losses, to restore the system's functioning on another basis, or to lower the members aspirations to match the system's lower capacity to meet their needs.

The systems affected can thus be classified by their degree of preparedness for stress or for particular kinds of stress. During the United States depression of the 1930's it took years to develop an adequate relief system and no effective means of restoring high employment was found up to the coming of the war (Lynd & Lynd, 1937; Brown & Webb, 1941; Schlesinger, 1957). Today American society can respond much more quickly and effectively to such a situation because of a variety of institutions and techniques created since the 1930's for dealing with mass unemployment. The Mississippi Valley today has an elaborate system of flood prevention, warning, and rescue which it did not have in the 1913 floods (American Red Cross, 1927, 1937). In a modern city, a fire in a block of buildings is contained by routine action of special organizations; before this century such fires often spread into city-wide disasters. Peacetime explosions or tornado impacts have in the past created widespread confusion and been dealt with by an outpouring of improvised individual and organizational behavior; explosions of the same dimensions in wartime air raids were handled in a routine manner. A crucial characteristic of stress situations is the extent to which the system has well-rehearsed roles for individuals, well integrated in organizations and plans, to deal with the given type of impact.

These three dimensions—the scope of the system primarily affected, the speed and duration of the impact, and the degree of institutional preparation—form a typology of collective stress situations which can be used to locate recent disaster research along with other relevant studies. This typology does not distinguish by the type of input whose change created the stress; much of the difference between

stresses of different origin is probably accounted for by their variation on the three variables which we are utilizing. Another important variable—the intensity of the stress, the extent to which it causes death and destruction rather than only discomfort and decline of resources—is also missing from the classification; it is only assumed that all the stresses are serious rather than trivial. Table 1-1 presents this typology.

This typology is useful to the extent that different social processes result from different combinations of the three variables. For example, when the onset of stress is sudden and institutional preparation is low, we would expect mass self-help rather than activity of formal organizations to be the main immediate response; the distribution of individual reactions and unorganized mass processes would be more important determinants of the outcome than organized systems of roles. When the scope of the stress is wide, the stricken localities cannot depend on an abundance of outside aid quickly flowing in, and must make more difficult decisions about allocation of its own resources to cope with the stress. With gradual onset and wide scope, the possibility of organized migration or large-scale preventive action becomes significant.

The Table has been filled in with a variety of examples. Most of these are collective stress situations which have been studied by social scientists. In addition, some cases have been included on which the main sources of data are journalistic, historical, or administrative reports, where necessary to provide examples.

The disaster studies of the last twenty years fall into two main clusters. One consists of disasters to small communities or to small segments of cities, coming without much warning and meeting little institutional preparation. These are the tornadoes, accidental explosions, flash floods, and the like. The other cluster consists of the studies of the effects of World War II bombing raids—a recurring impact with a relatively high degree of institutional preparation, covering most of the cities of whole countries. If we go back to the 1930's we find large-scale economic stress on a similar national scale; a number of careful case studies of communities and regions in the grip of the depression were made, as well as studies of family groups under depression stress.

The largest-scale sudden disaster on which we have systematic research is the Holland Flood of 1953 (Instituut voor Social Onderzoek van het Nederlandse Volk, 1955), which struck a region of hundreds of small communities. On a similar scale, but with more advance warning, were the great river-valley floods in the United States, which

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TABLE 1-1

A Typology of Collective Stress Situations

SCOPE	SPEED OF ONSET AND DURATION OF STRESS					
	SUDDEN LITTLE OR NO WARNING		GRADUAL WARNING POSSIBLE		CONTINUING LONG-RUN ADAPTATION NEEDED	
	Institutional Preparation		Institutional Preparation		Institutional Preparation	
	Low	High	Low	High	Low	High
NATIONAL		(Death of a head of state)		(Threatened epidemics in modern societies)	U.S. Depression of 1930's (Irism famine) (Black Death)	World War II bombing of Britain, Germany, and Japan
REGIONAL	Holland flood, 1953		(U.S. floods— 1913 and before) Hurricane Audrey in Louisiana Tampico flood	(U.S. floods— 1937) Recent Florida hurricanes	Dust bowl Saskatchewan farm crisis	(U.S. droughts— 1950's and after)
SOCIAL CATEGORY	Race riots	(Pogroms in Czarist Russia)	(Nazi genocide against Jews)		U.S. "relocation" of Japanese-Americans	
CITY	Halifax explosion Yuba City flood San Francisco earthquake and fire		Piedras Negras flood	Eagle Pass flood		
CITY-SEGMENT	Worcester tornado Beecher tornado Waco tornado Brighton gas explosions Farmington flood	Dallas tornado, 1957	San Angelo tornado		Urban decay, slum formation	
SMALL COMMUNITY	Arkansas tornado Lampasas flash flood	Mine disasters: Frankfort, Springhill			Railroad town hit by dieselization	

Note: Examples in parentheses were not studied by social scientists but by historians, journalists, etc. The major quantitative studies are underlined.

6

Table 1-1: Sources

(See bibliography for full references)

Arkansas Tornado: Marks & Fritz, 1954.
Beecher Tornado: Form & Nosow, 1958.
Brighton gas explosions: Marks & Fritz, 1954.
Dallas Tornado: Moore & Friedsam, 1958; Raker & Friedsam, 1960.
Dust Bowl: Collins, 1941; McWilliams, 1944.
Eagle Pass Flood: Clifford, 1956.
Farmington Flood: Kincaid & Klausner, 1956.
Florida hurricanes: Killian, 1954.
Frankfort mine disaster: Marks & Fritz, 1954.
Halifax Explosion: Prince, 1920.
Holland Flood: Ellemers & in't Veld-Langeveld, 1955; Nauta &
    van Strien, 1955; van Dijk & Pilger, 1955.
Irish Famine: Edwards & Williams, 1957.
Lampasas Flash Flood: Crane, 1960.
Louisiana Hurricane Audrey: Foley, 1957; Fogleman, 1958.
Nazi persecution and genocide: Allport, Bruner, & Jandorf, 1941;
    Kogon, n. d.
Piedras Negras Flood: Clifford, 1956.
Railroad town: Cottrell, 1951.
San Angelo Tornado: Moore, 1958.
Saskatchewan farm crisis: Lipset, 1950.
Springhill mine disaster: Beach & Lucas, 1960.
Tampico Flood: DeHoyos, 1956.
U. S. Depression: Lynd & Lynd, 1937; Brown & Webb, 1941;
    Schlesinger, 1957.
U. S. floods: American Red Cross, 1927, 1937.
Waco Tornado: Moore, 1958.
Worcester Tornado: Wallace, 1956; Rosow, 1955; Bakst, Berg,
    Forster, & Raker, 1955.
World War II bombings: U. S. Strategic Bombing Survey, 1947a,b;
    Titmuss, 1950; Janis, 1951; Iklé, 1958.
Yuba City Flood: Stiles, 1957.

occurred in almost every decade up to those of the 1930's. However, these were little studied by social scientists; our information is limited to that found in Red Cross operation reports and similar sources.

We have some kind of study of almost every type of collective stress situation, but the distribution of studies is decidedly uneven, and the coverage by systematic, quantitative studies is very spotty indeed. Moreover there is necessarily a complete lack of empirical studies of sudden disaster on a national or world-wide scale—the situation which will be of the most practical concern until a stable world-wide society has been created.

A Methodological Classification of Studies

Most of the early disaster studies were of a qualitative-descriptive sort. Data were gathered by unsystematic observations, interviews, and reading of contemporary accounts; numerical data were rare except for certain elementary pieces of social bookkeeping calculated by official sources. These studies are often contradictory, and report the more extreme and sensational events. They were fruitful however in identifying and classifying many kinds of individual and collective behavior which occurred in disaster. Once these basic observations were made it was possible to proceed in two directions: toward qualitative-analytical work which formulated hypotheses as to why things happened the way they did, and toward quantitative descriptive studies which counted the frequencies of various kinds of behavior. The quantitative data could be obtained in some cases by careful reexamination of records and statistics kept by government agencies and other organizations; but more often they had to be gathered directly from the population by the researcher, using survey methods.

Data on a large number of individuals permit a further type of study: the quantitative-analytical. The sample data which are the source of descriptive statistics can also be used to analyze relation-ships between characteristics and behavior of individuals. The rela-tionships suggested by qualitative analysis can be tested in this way. The operation of classifying each case on a number of variables, and then cross-tabulating to see how these variables are related, is a dis-ciplined procedure much more objective and powerful than the qualita-tive analysis, and permits handling of complex relationships among several variables.

If we are concerned with the study of collective units—organi-zations, groups, communities, or societies—which are composed of

individual members and sub-groups, a special set of problems arises. A study of one community disaster, employing rigorous sampling of individuals, permits us to generalize to the total population of individuals involved in that disaster. But it provides only a crude, unrepresentative sample of the individuals involved in all disasters of that type, let alone other kinds of disasters. Such a quantitative study observes individual behavior and attitudes under only one set of community and impact conditions. It is a single case study on the community level, no matter how many individuals have been interviewed. If we want to relate the performance of the community as a whole to community characteristics such as leadership, organizational structure, cultural background, or type of disaster impact, we need more community "cases." Thus the same study can be quantitative-analytical with regard to individual behavior in a particular community setting and a case-study with respect to variables at the community level. The same applies on still higher levels—the strategic bombing surveys describe for us two cases of national economic and political systems, Germany and Japan, although they analyze dozens of cases of cities, and thousands of individuals within these two national cases.

This suggests that we must distinguish between quantitative analysis on the individual and on the collective-unit level. There are three types of data which a study can gather: qualitative data only; quantitative data on a set of individuals; and quantitative data on the collective level only, such as census data and other official statistics characterizing large units. At the same time a study may cover different numbers of collective units: it can be a single case-study of one organization, community, or society, or a study of a large sample of collective units which permits us to make a quantitative analysis of the characteristics of collectives. In between lies an intermediate type of study: the comparative study of a small number of collective units—too few to permit statistical analysis. What researchers actually do when they analyze comparatively two, three or a dozen cases of organizations, communities, revolutions, or disasters remains a largely unexplored methodological question. The best guess is that they do a crude approximation of multivariate analysis and panel analysis.

If we combine these two dimensions of type of data and number of collective units studied we obtain the classification of disaster studies shown in Table 1-2.

The pioneer disaster studies were largely qualitative case studies, using individual observations or small numbers of qualitative interviews from a single disaster-struck community. The next development was the accumulation of a number of such qualitative studies— for example the National Opinion Research Center's collection of

TABLE 1-2

Types of Studies of Collective Units

TYPE OF DATA	NUMBER OF COLLECTIVE UNITS STUDIED		
	ONE Case Study	SEVERAL Comparative Study	MANY Statistical Study
QUALITATIVE ONLY	QUALITATIVE CASE STUDY Halifax explosion Worcester tornado	QUALITATIVE COMPARATIVE STUDY Form and Nosow on six organizations in a disaster Rosow on four tornado-struck communities Clifford's comparison of local government in two flooded cities	STATISTICAL ANALYSIS OF MANY QUALITATIVE CASE STUDIES (Cross-cultural survey type of study)
QUANTITATIVE ON INDIVIDUALS	QUANTITATIVE CASE STUDY Arkansas tornado survey Beecher tornado survey Holland evacuee survey Farmington evacuee survey Strategic bombing surveys—overall data on national morale	COMPARATIVE SURVEYS Clifford's surveys of public in Eagle Pass and Piedras Negras Arkansas survey when broken down by four communities studied Williams' comparison of several surveys relating to communications	SURVEY WITHIN MANY COLLECTIVE UNITS (Lazarsfeld and Thielens survey of faculty at 165 colleges) Strategic bombing surveys analyzed city by city
QUANTITATIVE ON COLLECTIVES	QUANTITATIVE CASE STUDY USING AGGREGATE STATISTICS Red Cross operations reports Study of effect of bombing on German economy	COMPARATIVE ANALYSIS OF AGGREGATE DATA ON COLLECTIVES Iklé's comparisons of postwar growth of several cities Studies of postwar growth rates of several countries	STATISTICAL ANALYSIS OF AGGREGATE DATA ON MANY COLLECTIVES Iklé's analysis of effect of bombing on housing and population in 64 cities (Angell on moral integration of 43 cities)

Note: For references, see Table 1-1. Studies in parentheses are not disaster studies but are used to exemplify the type of analysis.

qualitative interviews from a dozen disasters ranging from the collapse of a crowded porch to the explosion of a number of houses in a suburban neighborhood. This permits a qualitative comparative analysis. More systematic comparative analyses are exemplified by Rosow's (1955) study of authority systems in four tornado-struck communities, and Form and Nosow's (1958) analysis of the behavior of six organizations in the Flint-Beecher Tornado.

Another line of development was the quantitative survey in a single disaster situation. The best example remains the NORC area sample survey of a tornado-struck county in Arkansas (Marks & Fritz, 1954). A number of other studies employed some form of sampling procedure to investigate special topics such as communication of warnings or problems of temporary resettlement. The accumulation of several surveys with comparable questions makes possible comparative secondary analysis, like Williams' (1956) dissertation on communications behavior in disaster. In one study two adjacent communities were surveyed—one in Mexico, the other in the United States—and a few items of comparable data were obtained, dealing with warning and evacuation (Clifford, 1956).

The use of statistics characterizing collective units only, such as census and economic statistics for neighborhoods, towns, or regions, tends to lie more in the province of economists and demographers than in that of sociologists and social psychologists. The study of the effects of bombing on the German war economy is an example of such research. Iklé's (1958) analysis of the effects of bombing on housing and population movements in districts and cities in Japan and Germany is an outstanding example of comparative and statistical analysis of many collective units in disaster, using available aggregate statistics.

There is finally a phase of quantitative analysis of collective units which is familiar to physicists and economists, but seldom reached in empirical social research: the quantitative analysis of a system of interacting components. Beginnings have been made in studies of the operation of social group influence in voting decisions in a community, the spread of innovations within economic or professional groups, and the sequence of interactions within small groups (see Berelson, Lazarsfeld, & McPhee, 1954; Coleman, Katz, & Menzel, in press; Lennard & Bernstein, 1960). Studies of social processes over time, analyzed in terms of some form of model, are only in their infancy. It is often not realized that the systematic data gathered from individuals by a community survey can be analyzed in two quite different ways. The first, and usual, way is to study the influence of many different variables on individual behavior; the survey

becomes a very complicated natural experiment in which people's reactions are observed under many combinations of stimuli. The second way of analyzing quantitative data on a large sample of individuals is to consider them as components of a social system, so that the behavior of some constitutes the stimuli or the conditions of action for others. The survey is used here to study the community or other collective unit as a single system, taking measurements on the state of various parts of the system. This type of analysis is rare in any field of social research, including disaster studies. We will be particularly interested in the possibility of this type of analysis, and will attempt some crude reconstructions of community system processes using available quantitative and qualitative data.

Field Studies of Disaster Behavior: An Inventory lists an impressive total of 21,600 interviews made in 103 disasters or related events (Disaster Research Group, 1961). This suggests a vast body of systematic research. The amount is less impressive however when we focus on the study of behavior in physical disaster. In the first place, 3,000 of the interviews are from studies of false alerts; they concern only response to warnings. Another 7,100 come from the World War II Strategic Bombing Surveys, and are largely concerned with indications of morale rather than actual disaster behavior. (They do include data on economic behavior—e. g., absenteeism from work.) Another 2,500 interviews are from studies of epidemics or threats of epidemics. All of these studies have something useful to contribute to the analysis of disaster problems; but they do not go directly to behavior in community physical disasters. Of the remaining 9,000 interviews, about 3,000 come from very small sample studies with less than 100 interviews each.

This leaves about 6,000 interviews in what might be called "large sample studies of community physical disaster," covering 22 situations. Of these, 1,500 come from the Holland Flood study; they include a fairly representative sample of flood refugees, plus samples from particular hard-hit villages. Most of these people were interviewed mainly about their evacuation-refugee experience, but some questions concerned behavior in the disaster situation. Another 410 interviews come from the Arkansas Tornado study, of which 342 are a representative sample of the impact and of nearby non-impact areas. These people were interviewed in detail about their behavior in the disaster and their psychological reactions to it. These two studies are the most systematic and useful surveys of community physical disaster, with good sampling and wide-ranging interviewing. The bulk of the 6,000 remaining interviews come from studies focused on limited problems and phases (e. g., communications behavior in the warning phase, or adjustment of evacuees), from unsystematic

samples which do not represent any defined population, or from surveys which have never been adequately analyzed.

The result of this situation is that despite an apparently enormous number of incidents studied and interviews made, the researcher seeking quantitative data on behavior in physical disaster keeps falling back on the Arkansas and the Dutch studies plus a few others for certain topics. For evacuation and shelter experience the Farmington study by Kincaid and Klausner (1956) is highly useful. The Beecher Tornado study (Form & Nosow, 1958) contains some suggestive tables based on its unsystematic sample of 116 people who participated in volunteer rescue work. The Waco and San Angelo studies (Moore, 1958) also contain some suggestive figures, but the respondents do not represent any well-defined population; they are neither a random sample of the city nor a random sample of victims, but a collection of victims and non-victims from blocks which were partially hit.

What is badly needed is a continuation of the pattern set by the Arkansas study: a carefully drawn sample representing a meaningful population, an interview schedule covering both emotional response and rescue-relief behavior, and a careful multivariate analysis of the results. Even the Arkansas study is severely handicapped by not having enough cases to permit refined analysis of many important points.

Types of Findings of Disaster Studies

What is the methodological status of the findings of disaster research so far, in the light of the kinds of data gathered and the number and type of cases studied? Some findings are based on a few interviews in one disaster only; these are best considered pure hypotheses. Then there are the findings which are reported from several qualitative studies. These have some degree of confirmation, but are still limited by the question of how reliable qualitative observations are. There are some matters on which we may feel fairly confident of the qualitative observer—for example his reports of overt behavior of people whom he observed or interviewed directly. On the other hand, the observer's inferences about people's motives, his impressionistic correlations of which kinds of people acted in which ways, or estimates of frequency of behavior based on second-hand or stereotyped retellings probably have much less validity. A cumulation of such impressions from observers in many disasters may not reflect the structure of reality, but only the widespread existence of a stereotype. One of the major types of findings of recent disaster research is the exposure of such stereotypes as untrue, by comparing them with careful observations in a number of disasters.

A quantitative finding from a survey in one disaster situation has a high degree of reliability for that situation, but how far it can be generalized remains a question. The statistics which are found in several disaster studies begin to achieve the status of strongly supported empirical facts, but the problem of generality still remains since as we have seen disasters can be of many different types. It is only when we have built up a network of reliable findings from a wider range of disaster situations that we will be able to generalize with confidence.

In this paper we are not primarily concerned with taking inventory of all propositions which have been advanced about disaster and grading them as "soft," "medium-soft," "medium-hard," and "hard." Our emphasis is rather on taking some of the findings which have been reported in several studies, or for which there is quantitative evidence in at least one study, and seeing how they fit together in an analysis of social systems under stress. The basic findings considered range from medium-soft to medium-hard, with occasional speculations (so labeled) used to piece out the system.

The Problems Studied in Disaster Research

The problems studied in disaster research could be classified in a wide variety of ways in terms of their substantive content, that is, of variables whose relationships constitute the problem. We will suggest here a rather formal framework based on the notion of time phases in disaster and on the level of the social unit to which the variables apply. Within this framework substantive problems can be placed, expressed either in terms of applied problems or more theoretically oriented categories.

A social system's response to a disaster can be divided into few or many time phases. Here we will distinguish five phases:

1. the pre-disaster period;
2. the period of detection and communication of a specific threat (absent or truncated in sudden disasters);
3. the period of immediate, relatively unorganized response (a significant stage in sudden disaster, but less so in gradual and long-term impacts);
4. the period of organized social response which covers the days, weeks or months of organized relief and rehabilitation in temporary disasters, and may take years in long-term disasters or very heavy impacts; and

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5. the "long-run" post-disaster period when the system is restored to relative equilibrium and the "permanent" effects of the disaster have been incorporated in it.

The levels of social units which can be distinguished are also somewhat arbitrary. A direct line of aggregation on a spatial basis would give us individuals, neighborhoods, communities, regions and nations. Within the community it is useful to distinguish small groups and formal organizations. The "community" itself can be thought of as consisting of a community government, a network of formal organizations within the community, and an overlapping set of "masses" or "publics"—large unorganized aggregates of people acting with reference to common objects. There are also formal organizations at the regional and national levels. These have been relatively little studied in connection with disasters, although the work of Titmuss (1950) on national organization of social services in wartime Britain and Crane (1960) on the state disaster organization in Texas present useful beginnings.

This preliminary classification of problems is summarized in Table 1-3. The variables listed under each time period are those prominent in the research or in the discussions of problems of disaster; the inventory is by no means complete, and is mainly intended to illustrate the types of variables which apply to different levels. The classification, like the studies on which it is based, is oriented mainly to the situation of a community disaster, in which individuals, small groups and organizations are participants and to which the undamaged regional or national system provides help.

The coverage of problems by existing studies is decidedly uneven. We have a great deal of quantitative data on individual response to warnings, but little on the behavior of organizations in originating and transmitting warnings. We know a good deal about the immediate response of individuals and small groups in the impact area, but little about the process of mobilizing outside aid. The long-run consequences of disaster remain largely unexplored, except for the follow-up study of Hurricane Audrey (Bates, Fogleman, Parenton, Pittman, & Tracy, 1962) and the work by Beach and Lucas on Minetown (Minetown Research Team, 1961).

A much needed type of study is a systematic survey of organization members concerning their behavior and reactions during the emergency. (See Meda White, 1962, for one of the rare examples.) We know far too little about the problems of formal organizations under stress. Descriptive reports have raised many questions which only statistical data can answer. The ideal study would combine a sampling of members of the general public in the impact and non-impact

TABLE 1-3

Disaster Problems by Period and Social Unit

SOCIAL UNIT	PERIOD				
	PRE-DISASTER	THREAT	IMMEDIATE RESPONSE	ORGANIZED RESPONSE	LONG-RUN POST-DISASTER
INDIVIDUALS	Anticipation of danger Preparedness behavior	Response to warnings or cues	Affective and cognitive response to impact Role behavior: selection of role effectiveness motivation expectations of others	Morale, plans Role behavior: selection of role effectiveness motivation expectations of others	Morale, plans Emotional and physical symptoms
SMALL GROUPS	Opinion-forming interaction	Opinion-forming interaction	Interactions influencing affect Role allocation consensus Cohesion Choice of group tasks	Interactions influencing affect Role allocation Cohesion Relation to formal organizations	Effects in role allocation Effects on cohesion
FORMAL ORGANIZATIONS	Organizational preparedness	Mobilization Response to warning Transmission of warnings	Mobilization of members Coordination of members Relations to mass public and other organizations	Coordination of members Relations to mass public and other organizations	Effect on internal structure Effect on public relations Effect on interorganizational relations
COMMUNITY SYSTEMS	Community planning and facilities for disaster Social integration	Flow of warnings	Flow of information Balance of supply and demand for disaster services Leadership and coordination of organizations and mass public	Flow of information Balance of supply and demand for disaster services Leadership and coordination of organizations and mass public	Effect on community plans and facilities Effect on leadership and organization Rate of reconstruction
STATES, REGIONS, NATIONS	State and national plans and facilities	Flow of warnings in larger area	Mobilization of outside aid: speed, amount Coordination of activities	Amount of outside aid contributed Allocation of economic burden Coordination of activities	Effect on plans and facilities Effect on morale, values Effect on economy

sectors of a community with a special sampling of members of formal organizations which were active in the disaster (and perhaps of some which were not active). This would carry further the study of the community as a social system responding to stress.

Scope of the Present Review

There have been several attempts to summarize what is known about individual behavior in disaster (Wolfenstein, 1957; Fritz, 1961; Marks & Fritz, 1954). This review is concerned with putting some of these findings together, in order to analyze the operation of social systems under stress. We will be more concerned with the social consequences of behavior than with the inner processes which cause it; the emphasis is sociological rather than psychological.

We will be concerned primarily with the types of stress studied under the label of disaster research, which is to say, sudden and violent changes in the physical environment threatening both life and property. At many points however we will draw comparisons with other types of collective stress situations, such as the impact of depression, industrial change, or urban decay, in order to clarify the effects of particular aspects of the disaster stress.

For practical reasons, the analysis will focus only on selected time periods in the disaster sequence. The entire question of pre-disaster preparedness, on which there is relatively little research, will be left out, as well as the subject of the detection of threat, the issuance and transmission of warnings, and response to warnings, on which there is a great deal of research. This book will begin with the actual impact of disaster and consider individual and collective response in the "emergency social system" which tries to cope with the immediate pressing needs that result, and, in the subsequent period of organized effort, to provide relief and restore community services. The longer-run problems of permanent reconstruction and ultimate effects are also neglected here, partly to simplify the task and partly because so little detailed research has been done on them.

CHAPTER 2

SOCIAL ROLES IN THE EMERGENCY SOCIAL SYSTEM

The Problem of Securing Appropriate Individual Behavior

Any large unfavorable change in the inputs of a social system
disrupts its normal flow of activities and threatens the satisfactions
and values of its members. Something has to be done to restore
equilibrium, either by starting new activities to meet people's needs
or by inducing people to accept a lower standard of goal achievement.
If the environmental change is gradual and continues for a long time,
the system adjusts to it through normal processes of collective
decision-making and change in role systems. But if the change is
rapid, it disrupts these processes and creates new ones, which call
into being an "emergency social system." This is much more loosely
organized than the normal social system, but it is by no means a state
of chaos.

Most disaster research in recent years has been concerned with
the sudden physical destruction of small rural communities or of a
part of an urban community. The accidental explosion, the tornado,
and the sudden flood are the typical situations studied. The sudden
destruction of buildings and facilities creates a large number of urgent
new individual needs—for rescue, medical care, and reassurance
about the safety of loved ones. At the same time it damages the means
by which normal needs are met—by destroying shelter, household
equipment, and supplies of food and clothing—creating a need for
substitute facilities. Furthermore, it damages the facilities by which
economic and governmental organizations carry on their normal activ-
ities and deal with emergencies. Thus there is a combination of
increased needs and destruction of means for meeting needs; and many
of the new needs are urgent, requiring very quick action to avoid
drastic losses.

The first few hours after a sudden physical disaster therefore
form a period with peculiar characteristics, deriving from the crush-
ing overload of needs and the life and death importance of rapid action.
The time-lags of normal social processes are far too long to permit
the situation to be handled normally. An emergency social system

has to be created to fill the "social vacuum" (Leeds, 1961) and meet the massive disaster needs with a flood of disaster services. People and equipment must be mobilized to do rescue work, provide medical care, give shelter, food and clothing to those who have lost theirs, reassure or reunite primary group members, and repair damaged public services essential to the community welfare. At the same time the essential maintenance activities must be continued, including the care of dependent children and the regular feeding of families, as well as maintaining public order and public utilities output.

In this chapter we will consider the problems of individual behavior in this emergency social system of the first few hours after sudden physical disaster. In the next chapter the aggregate consequences of individual responses will be considered.

There appear to be three main obstacles to effective individual participation in the emergency social system. (1) The society may have failed to define adequately what a person's role should be under these unusual circumstances, so that people literally do not know what to do. (2) Different groups in which the individual has a role may require his participation at the same time, creating a role conflict for the individual and a shortage of personnel for some groups. (3) There may be a failure to motivate the individual who is not directly affected to perform disaster roles. Either internalized feelings of obligation, social pressure, or emotional involvement must be present if people are to play a community service role. The problem may be summed up by saying that when the system of roles is inadequate to the unusual situation, individuals experience confusion, conflict, and indifference, hence essential jobs are not done and the social system works at low efficiency. We will examine these three obstacles to useful individual behavior and also the mechanisms by which the social system sometimes overcomes these difficulties.

Role Definition as a Problem in the Emergency Social System

To have a well-defined social role, the individual needs to know with whom he should interact, what to do, to what end. At the same time the others with whom he interacts must have at least roughly similar definitions of his role if they are to cooperate effectively. In situations for which definitions of the social relationships or of what to do are lacking, strong motivation to achieve some general goal is not enough for effective performance.

These three elements—motivation toward the general goal, knowledge of what to do, and knowledge of with whom to do it—can be

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used to form a simple typology of disaster roles. For the moment
we will assume high motivation.

Typology of Disaster Roles

	Motivation toward goal	Knowledge of what to do	Knowledge of relationships	
1.	Strong	Present	Present	Well-defined disaster role
2.	Strong	Absent	Present	Improvised activities in well-defined role relationships
3.	Strong	Present	Absent	Improvised relationships for familiar activities
4.	Strong	Absent	Absent	Entirely improvised role

The first pattern, the well-structured disaster role, is found
among trained members of disaster organizations; it is also found
among family members who are confronted with tasks within their
capacities, like a woman outside the disaster area taking in and feed-
ing relatives who have fled the disaster area. The second pattern is
typical of family members confronted with tasks beyond their expe-
rience, like the need to rescue a member from under wreckage or to
give first aid when they have no training for these jobs. They are
required to improvise activities as best they can, and may not succeed.
This situation also characterizes an organized group confronted with
a situation which it is not trained to handle—for instance, firemen
having to cope with a flood. The third pattern is that of the skilled
volunteer—the person with disaster-relevant skills who belongs to no
disaster organization, and who must improvise relationships to other
helpers and to victims.

The last pattern is that of the unskilled volunteer. The double
unclarity of what to do and in what social relationships to do it has
led some writers to declare that a rescue role for the untrained
citizen is almost nonexistent (Form & Nosow, 1958, p. 100). Yet
large numbers of people in sudden physical disasters appear strongly
motivated to play this role—to do something to save lives and reduce
suffering in the community in general. This strong acceptance of the

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general goal by large numbers of people, along with the absence of preestablished social organization for their activities creates a collective-behavior phenomenon which students of disaster have labelled the "informal mass assault"—large numbers of people with little organization or skill swarming over the impact area trying to rescue and care for victims.

It is worthwhile to further specify "knowledge of relationships" as a part of role definitions. For the rescue worker in disaster, these include both relationships to "clients"—people to be rescued—and to collaborators in the rescue effort. The community-oriented volunteer does not have any definitely assigned group of victims to attend to, nor does he have a definitely assigned set of collaborators. The father of a trapped child may be perfectly clear about whom he should rescue, but not know which other people he can get to help him. Being a rescue worker is actually, to use Merton's terminology, a status with a whole set of role-relationships to other statuses. The problem is that many or all of these roles in the role-set are socially undefined.

Role Competence and Deviant Behavior in Disaster

The presence of strong motivation along with inadequacy of the socially provided means for achieving the goal is common to the last three situations in the typology. It is also a familiar situation in sociological analysis. Merton's analysis of deviant behavior starts with an assumption that for many people in American society there is a strongly internalized success motivation, but inadequate access to the culturally approved means for achieving success (Merton, 1957, 131-160). Under this stress, those who are able to may engage in innovative behavior contrary to the norms but aimed at the approved goal of success. Those who are too strongly bound by the old norms regulating means, or who are incapable of successfully engaging in innovative behavior (Cloward, 1959), may abandon the goal but keep up the activities originally intended to achieve it—ritualistic behavior. Or the frustrated may give up on both ends and means and engage in retreatism—become drunks, hoboes, drug addicts or mentally ill.

The behavior of people in a disaster situation can be classified in much the same terms and related to the same situational factors. We would expect those with well-structured disaster roles to be able to play them without too much difficulty. For those whose means, either technical or social, are not adequate to their ends, we would expect a higher rate of psychological casualties; the rate would be higher, the greater the discrepancy between strength of motivation and adequacy of means. These casualties may take the form of

ritualism—continuation of accustomed activities which have no relevance to the real situation, like the man who was trying to sweep away 20 tons of debris with a broom, or the mother who continues to care for her dead baby as if it were alive. Or they may take the form of retreatism —the shocked condition of unresponsiveness to stimuli, the hysterical condition of uncontrolled expressive behavior (Wallace, 1956, 109-141).

Corresponding to "innovation" in Merton's typology of individual responses, we have what might be called "improvisation." Here the contrast between the disaster situation and that of the poorly-integrated social mobility system discussed by Merton must be stressed. In short-term physical disasters in American society, the overwhelming consensus of public opinion apparently tolerates a temporary suspension of property rights, contracts, and other secondary relationships, while primary-group norms and norms of general social solidarity are given extraordinary priority (Thompson & Hawkes, 1962). The mechanisms by which this system of disaster goals and norms is created and then eliminated will be discussed later. The consequence, however, is that the "means problem" in these disasters is not one of adhering to or violating social norms, but one of finding or failing to find effective technical and organizational means in a situation for which the society has not given people specific training or experience. It is those who fail to find effective ways of improvising who presumably turn to ritualism or retreatism.

The study of community adaptation to disaster should therefore pay attention to the social mechanisms which make for more effective improvisation of a disaster role, including both its technical activities and social relationships.

Empirical Data on Role Competence and Deviant Behavior

The Beecher Tornado Study

The only quantitative data on the subjective experience of inadequate skills in the disaster situation were obtained by Form and Nosow (1958), who surveyed members of informal rescue groups in the Beecher Tornado. The sampling was rather unsystematic, and the number of cases was apparently too small for refined analysis. Only 24 per cent of their sample of volunteer rescue workers reported experiencing an "intrapersonal means conflict"—which appears to mean difficulty in choosing among actions to a given end. The relationship of these experiences to location in the disaster and to sex are given. Those who were with their families in the impact area were the most

likely to experience internal conflict over means, presumably because they confronted the most difficult situation immediately after impact. Women, who might be expected to have fewer disaster-related skills, were somewhat more subject to means conflict than men, as are the few teen-agers interviewed.

TABLE 2-1

Incidence of Intrapersonal Means Conflict Among
Volunteer Rescue Workers in the Beecher Tornado

	Per cent in conflict	N
Position at time of impact:		
With family in impact area	31	(52)
With family in periphery	23	(30)
With family outside impact area	18	(11)
Separated from family, family closer to impact	13	(15)
Separated from family, respondent closer to impact	13	(8)
Sex and age:		
Men, 20 and over	20	(59)
Women, 20 and over	31	(39)
Persons under 20	27	(15)

Source: Form & Nosow, 1958, Tables 11, 12, 13.

We would expect people who want to do something very strongly but don't know how to do it to have a tendency to escape from their cruel dilemma. This expectation is supported by the relationship found between means conflict and panic or shock behavior. Panic was defined as "random or manic behavior," while shock was "acting dazed or didn't seem to do anything." Of the respondents who suffered from intrapersonal means conflict, 36 per cent at some time showed panic or shock behavior, compared with 16 per cent of the rest of the sample (Form & Nosow, 1958, Table 10). Unfortunately we do not know to what extent means conflict overlaps with role conflict, which was even more highly related to a non-adaptive response.

The Arkansas Tornado Study

The best evidence of the importance of the skill component in disaster roles is found in the National Opinion Research Center's study

of the Arkansas Tornado (Marks & Fritz, 1954). Probability samples
of the residents of the impact area and the non-impact area within four
townships were taken. The study did not inquire directly into aware-
ness of role inadequacy. However, it did classify respondents accord-
ing to their possession of some disaster-relevant experience. Military
experience, construction or utilities work, professional training, hold-
ing a public office, and membership in protective or disaster organi-
zations were considered indicators of probable disaster-relevant skills.
The skills were generally not the result of specific training for disaster
or disaster experience, but rather skills developed in other roles which
might be borrowed for disaster roles. Table 2-2 shows the character-
istics of the skilled compared with the unskilled population.

TABLE 2-2

Relation of Skills to Background

	Impact Area		Non-Impact Area	
	Skilled (per cent)	Unskilled (per cent)	Skilled (per cent)	Unskilled (per cent)
Background:				
Men	76	41	67	29
Under 45 years of age	67	36	71	47
With dependents (excluding wives)	62	34	62	46
Exposure to impact:				
Property damage high	67	62	0	0
Injury to household members medium or high	48	41	0	0
Number of respondents	(42)	(97)	(54)	(104)

Source: Marks & Fritz 1954, Tables 6-11, 6-12, 6-13, 6-22.

The skilled group is different from the unskilled in three
significant background variables: about twice as many are men, they
are much younger on the average, and many more have dependent
children or aged relatives. Since the tables which compare response
of the skilled and the unskilled do not control for sex, age, and depend-
ency burden, it is impossible to sort out the effects of skill for those
of different age, sex, and family roles. Keeping these differences in
mind, it may still be useful to look at the behavior of the skilled and
unskilled groups.

During the impact itself the skilled were slightly more active in assisting others, but not notably so. Activities in this brief and hectic period were limited largely to trying to protect others and directing others to what seemed safer places of immediate refuge. Such activities of course required the presence of someone else to protect or direct, and 17 per cent of the unskilled respondents were alone compared with only 5 per cent of the skilled (Table 2-3).

In the first half hour after the impact, strong differences appeared between the skilled and the unskilled residents of the impact area. The skilled were much higher in both rescue activities and emergency relief. There was much less difference between the skilled and unskilled in the less demanding activities of searching and "observing and investigating." And few in either group offered medical aid, perhaps because this involved skills which neither possessed.

Among people living outside the impact area, rescue work was performed almost exclusively by those with disaster-relevant skills. On the other hand relief was given almost equally by skilled and unskilled. One explanation is that these rescuers had to go into the impact area, and only those with some skill undertook to do this; while among impact area residents even the unskilled might be confronted with situations demanding immediate rescue activity. Relief work by the non-impact population, on the other hand, could mean staying home and giving food and shelter to refugees from the stricken areas—a job quite within the skills of any housewife or grandmother. To give relief in the impact area was much more difficult, since most houses were severely damaged and electricity, gas, and water were off.

Most impact area residents had damaged houses, and many were soaked, bruised, and mudcovered; almost half suffered at least minor injury. The remarkable thing is that the skilled group among them, who suffered as much personal injury or hardships as the unskilled, still considered it their business to provide relief to the others, rather than to receive help. Only 17 per cent of the skilled received relief in the first half hour, while over 40 per cent of the unskilled were recipients of such relief. Role differentiation was already present. Altogether 74 per cent of the skilled people in the impact area performed some rescue or relief services for community members generally, aside from their family and close friends, at some time after the impact, compared with 40 per cent of the unskilled. Outside the impact area, the two groups were much less differentiated; more of the unskilled and fewer of the skilled played active community roles than in the impact area. Under the more normal physical conditions of this zone, special disaster skills were apparently less essential to relief roles, and those with skills were less motivated or had less opportunity to use them.

TABLE 2-3

Comparison of Activities of Skilled and Unskilled

Activities	Impact Area Residents			Non-Impact Area Residents		
	Skilled (per cent)	Unskilled (per cent)	Difference	Skilled (per cent)	Unskilled (per cent)	Difference
During impact:						
Protective of others	62	55	7	- - -	- - -	
Leadership	32	23	9	- - -	- - -	
Flight	2	12	10	- - -	- - -	
First half hour:						
Rescue work	36	15	21	11	1	10
Emergency relief	62	39	23	29	23	6
Medical aid	5	4	1	12	3	9
Search for missing	36	25	11	32	23	9
Observation and investigation	40	32	8	55	46	9
Normal routine activities	0	3	-3	27	57	-30
Received emergency relief	17	41	-24	0	1	-1
Any time:						
Direct, active rescue work	31	15	16	9	3	6
Medical-hospital work	2	0	2	17	9	8
Informal relief to general community members	52	26	26	30	31	-1
Any active community role (one or more above)	74	40	34	56	45	11
Number of respondents:	(42)	(97)		(54)	(104)	

Source: Marks & Fritz, 1954, Tables 6-18, 6-23, 6-25.

In their first manifestations of emotional response, those with disaster skills in the impact area appear only slightly less affected than the unskilled (Table 2-4). The only large difference is in resorting to prayer, which as we shall see is largely a woman's occupation. Of the non-impact residents, the unskilled were more strongly affected, both in their first emotional reaction and in their continuing symptoms after the emergency, although not during the main period of the emergency itself. During this period most of the skilled people in the non-impact area actually went into the impact zone and saw first-hand the damage and suffering, while the unskilled stayed home trying to carry on normal routines.

If we expect role competence to reduce stress in a disaster situation, it is surprising that the skilled persons in the impact area should be so little better off than the unskilled. Perhaps the explanation lies in an additional difference between these groups, noted earlier: many more of the skilled had children or aged dependents. The skilled indeed had more adequate means at their disposal, but they also had greater demands upon them for the achievement of their goals. Skilled persons from outside the impact zone, on the other hand, had the advantages of competence without such severe emotional involvement with the goal. If it is the balance between strength of role motivation and adequacy of role competence which determines emotional stress, the advantage of the skilled person with dependents in the impact area over an unskilled person without dependents is narrowed or eliminated.

These assumptions about the effects of role motivation and role competence can be summed up in a typology of disaster positions. We must add to these two factors an obvious third one—the direct stress of being in the impact oneself, as compared with being outside the impact area. The relation of this typology to the concrete groupings by skill and residence, and to several indicators of stress, is shown in Table 2-5.

Unfortunately we are not able to separate the skilled and unskilled according to their dependency burden. The incidence of physical reactions after the emergency period was over (various symptoms like upset stomach, headaches, etc.) corresponds closely to the assumed degree of stress. In the first half hour the skilled impact residents were somewhat less affected than would be expected, and the unskilled non-impact residents are a good deal more affected. During the next six hours all groups were almost equally affected with the exception of the unskilled non-impact group. Actually the skilled non-impact residents by this time were mostly in the impact area helping or searching; only the unskilled non-impact group were generally outside the actual scene of destruction.

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TABLE 2-4

Comparison of Stress Reactions Among Skilled and Unskilled

Reactions	Impact Area Residents			Non-Impact Area Residents		
	Skilled (per cent)	Unskilled (per cent)	Difference	Skilled (per cent)	Unskilled (per cent)	Difference
During impact:						
Expressive behavior	5	13	-8	---	---	
Praying	21	37	-16	---	---	
First half hour:						
Uncontrolled or shocked	21	18	3	0	5	-5
Any strong affect	57	69	-12	45	63	-18
Next six hours:						
Shocked	12	16	-4	---	---	
Any strong affect	64	62	2	60	53	7
Any time in next two weeks:						
Physical reactions	64	73	-9	33	50	-17
Psychological reactions only	24	18	6	28	24	4
None	12	9	3	39	26	13
Number of respondents:	42	97		54	104	

Source: Marks & Fritz, 1954, Tables 6-18, 6-24, 6-26.

TABLE 2-5

A Typology of Disaster Positions

Direct impact exposure	Role Motivation	Role Competence	Concrete categories in this position	Assumed degree of stress	Indicators of stress		
					Strong Affect		Physical Symptoms
					First half hour (per cent)	Next six hours (per cent)	After six hours (per cent)
High	Medium	Low	Unskilled impact residents (34% with dependents)	Higher (2+)	69	62	73
High	High	High	Skilled impact residents (62% with dependents)	Higher (2)	57	64	64
Low	Low	Low	Unskilled non-impact residents	Medium (1)	63	53	50
Low	Low	High	Skilled non-impact residents	Lower (0)	45	60	33

The NORC report (Marks & Fritz, 1954) gives a direct measure of dependency burden in the classification by "household role." This divides the sample into male household heads with dependents (meaning children or aged relatives), male household heads without dependents (aside from their wives), women with dependents (almost entirely mothers with young children), and a residual category of "non-responsible roles." This last is made up largely of women—wives without young children, unattached or dependent females—plus a very few unattached males. Unfortunately this classification is not subdivided by disaster skills; however, the male household heads are generally skilled, while the females are generally unskilled. Therefore we can use the sex breakdown as a crude approximation of the skill classification. The physical impact on all four groups was roughly the same, as shown by the property damage figures; those with dependents were of course more likely to have someone in the household injured (Table 2-6).

TABLE 2-6

Comparison of Household Status Groups by
Background Characteristics

Background Characteristics	Male head with dependents (per cent)	Wife with dependents (per cent)	Male head without dependents (per cent)	Other non-responsible roles (per cent)
	Impact Residents			
	N=33	N=28	N=26	N=52
Had disaster-related skills	58	25	39	12
Age: under 45	75	75	31	19
Property damage high	64	54	65	67
Household injury loss medium or high	52	57	38	33
	Non-Impact Residents			
	N=29	N=51	N=26	N=51
Had disaster-related skills	79	20	46	25
Age: under 45	64	84	25	32

Source: Marks & Fritz, 1954, Tables 6-14, 8-2, 8-3.

The behavior of people during impact was strongly influenced by whether they had dependents. Those with dependents generally took some kind of action protective of others (usually some desperate, improvised action like hanging onto them or shielding them from debris). Uncontrolled flight was rare but occurred almost exclusively among those without dependents. Leadership, on the other hand, was found mainly among males with dependents; while seeking protection or being protected was almost entirely a female prerogative (Table 2-7).

After impact the males in the impact area were much more active in rescue and relief than the females, and those men with dependents more than men without. The effect of dependency was reversed among the females—those with dependents were the least active of all in providing help to people outside the family. (Unfortunately figures are not given for help to the family and friends.) Outside the impact area the women with dependents likewise lagged behind all the other groups, while the men with dependents were the only group to perform rescue work. Community-oriented activity was almost as frequent among women without dependents as among men; it was apparently less related to possession of disaster-relevant skills as defined in this study.

If we look at the emotional responses to the disaster, we are struck by the strong manifestations of stress among wives with dependents (Table 2-8). Compared to other women ("other non-responsible roles" being mainly women without dependents), they did much more praying; they had a much higher rate of non-adaptive behavior in the first half hour; and they had more physical symptoms and more long-lasting psychological reactions after the emergency period. At the other extreme are the men without dependents, who manifested far less stress. The male household heads with dependents were also quite low in non-adaptive behavior and in affective reactions during the first six hours after the impact. That they were nonetheless under considerable stress is suggested by the high proportion with physical reactions after the emergency was over; however these were not as long-lasting as the symptoms found among the women of both groups.

Outside the impact area we again find women with dependents very high in emotional reactions and in later physical symptoms, while among men outside the impact area dependency did not seem to cause greater stress. The typology of disaster positions which was earlier applied to the skill group can be applied to these categories (Table 2-9).

TABLE 2-7

Activities of Different Household Status Groups

	Male head with dependents (per cent)	Wife with dependents (per cent)	Male head without dependents (per cent)	Other non-responsible roles (per cent)
	Impact Residents			
During impact				
Protective of others (% among those not alone)	69	68	31	23
Leadership (% among those not alone)	38	22	27	20
Uncontrolled flight	6	4	15	12
Seeking or getting protection from others (% among those not alone)	6	29	4	37
Any time				
Direct rescue work	43	0	30	14
Any active community role (rescue, relief to other than relatives, organization volunteer)	75	29	57	51
	Non-Impact Residents			
Any time				
Rescue work	21	3	3	3
Any active community role	61	42	56	54
First half hour: routine activity	59	81	69	87
Next six hours: routine activity	21	61	56	47

Source: Marks & Fritz, 1954, Tables 8-5, 8-6, 8-7, 8-8, 8-10, 8-11, 8-16.

TABLE 2-8

Stress Reactions Among Household Status Groups

	Male head with dependents (per cent)	Wife with dependents (per cent)	Male head without dependents (per cent)	Other non-responsible roles (per cent)
Impact Residents				
During impact				
Praying	18	61	12	37
First half hour				
Uncontrolled or shocked	9	40	4	23
Any strong affect	54	79	50	71
Next six hours				
Shocked	9	14	8	23
Any strong affect	48	71	43	67
After one week				
Psychological reactions	48	82	46	71
Next two weeks				
Physical reactions	70	90	42	75
Psychological reactions				
only	24	3	31	19
None	6	6	27	6
Non-Impact Residents				
First half hour				
Any strong affect	38	70	42	55
Next six hours				
Agitated	23	59	39	51
Next two weeks				
Physical reactions	26	61	28	47
Psychological reactions				
only	33	16	25	30
None	41	23	47	23

Source: Marks & Fritz, 1954, Tables 8-6, 8-17, 8-18, 8-19, 8-20, 8-21.

TABLE 2-9

Typology of Disaster Positions Related to Household Status

Direct impact exposure	Role Motivation	Role Competence	Concrete categories in this position	Assumed degree of stress	Indicators of stress		
					Strong Affect		Physical Symptoms
					First half hour (per cent)	Next six hours (per cent)	After six hours (per cent)
High	High	Low	Impact women with dependents (25% skilled)	High (3)	79	71	90
High	High	High	Impact men with dependents (58% skilled)	Medium-high (2)	54	48	70
High	Low	Low	Impact non-responsible roles (12% skilled)	Medium-high (2)	71	67	75
Low	Low	Low	Non-impact women with dependents (20% skilled) Non-impact non-responsible roles (25% skilled)	Medium-low (1)	70	59	61
High	Low	High	Impact men without dependents (39% skilled)	Medium-low (1)	55	51	47
Low	Low	High	Non-impact men with dependents (79% skilled)	Very low (0)	38	23	26
Low	Low	High	Non-impact men without dependents (46% skilled)	Very low (0)	42	39	28

The scheme corresponds very closely with the observed stress indicators, with a few exceptions. The impact men with dependents apparently restrained their emotional responses during the emergency period to a level almost as low as the impact men without dependents; however, they had many more later physical symptoms than those without dependents. The non-impact women with dependents—who in fact were not confronted with actual injury to their dependents—were nevertheless quite upset, much more so than non-impact women without dependents. This may reflect the near-miss effect—the emotional reaction to thinking about what might have happened to their families, or it may reflect closer ties with other relatives in the disaster area, on which no data are given. No such effect, however, is found among the non-impact men—those with dependents were if anything slightly less affected. The strong reaction of the non-impact women with dependents remains unaccounted for by this explanatory scheme.

These results support the notion that role motivation and role competence are involved in a kind of demand-and-supply balance. The group for which this balance was most unfavorable—impact women with dependents—was the only group to show a significant amount of non-adaptive behavior immediately after impact—40 per cent being uncontrolled or shocked for a brief time then. This group also had the most long-lasting psychological and physical symptoms. The impact-area men with dependents had very little non-adaptive behavior, and participated more highly than any other group in rescue and community-oriented activities; they were apparently able successfully to improvise disaster roles which carried them through the emergency without overt breakdowns and with less severe emotional reactions. The non-impact males were the most advantaged, having the skills without the excessive motivational pressure.

A more precise analysis of this problem would require a large enough sample to classify both men and women by skill and dependency burden, and also to control the age differences which are a possible source of confusion in these tables. Here all the figures are based on so few cases that they are far from being definitive evidence.

Organizational Role Competence in Disaster: The
Effects of Recruitment According to Social Status

The materials on role competence considered so far have all concerned performance of family roles or roles as volunteer rescue and relief worker in the unorganized mass assault. The performance of organizational roles under disaster conditions has not been studied in a large-scale quantitative way. The qualitative studies however provide suggestive evidence on several points.

One major problem in organizational role performance is that of the competence and sense of duty of the organization leaders. This appears particularly in voluntary associations, but also where position in public agencies is ascriptive rather than achieved through competence, as when it is obtained through general social status or particular social ties.

A striking example is presented by Form and Nosow's description of a voluntary disaster organization in a large city adjoining a tornado-struck suburb:[1]

> The key committee chairmen in most cases either did not go directly to headquarters, or having gone there, did not remain there to organize activities (1958, pp. 190-191).

> As indicated, the disaster plan depended for its execution upon high status volunteers who occupied the key roles of committee chairmen. Only three of nine chairmen interviewed phoned others when they heard of the disaster. Three did not take action of any sort upon hearing of the disaster (p. 193).

> Rank-and-file members of these crucial committees . . . first responses were either to call the committee chairman or the Chapter House for orders or directions. In most cases, since orders were not forthcoming, the permanent volunteers went directly to the disaster area . . . (p. 194).

Those responsible for mobilizing the organization either did not mobilize themselves or did something other than their assigned role. While there was a large input of member activity, it was disorganized and inefficient. Why did this organization's leadership fail to play their assigned roles?

Form and Nosow explain the difficulty largely in terms of the problem of recruitment of personnel for a voluntary organization:

> Since it is difficult to get ideal personnel for each role, volunteers who lack competence must often be used. Hence, a situation often arises where the community status of the individual dominates the official evaluation of his competence.

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[1] In this and other examples drawn from descriptive reports we will take the facts as given; since there is no systematic coverage of such events by team reporters, it is impossible to consider the question of accuracy.

Consequently, high-status roles within the organization are often delegated to volunteers with high status in the community, rather than to persons who have more technical competence (1958, pp. 214-215).

However, it was not only these high-status "volunteers" who failed to do their job.

After being alerted, the local members of the Red Cross exhibited a wide variety of behavior. Some responded immediately and acted in accord with the demands of their position, while others did not. One would anticipate that the former would be the professional workers and the paid staff. This was not entirely the case, for most of the professional personnel behaved almost randomly, and not in accord with the demands of their offices. Actually, those responsible for the direction of activities at headquarters, both paid and volunteer workers, went to the tornado area instead. The confusion and inability to communicate adequately with others in the organization from the field decreased the chances of effective and centralized administration (Form & Nosow, 1958, p. 193).

The behavior of the full-time, paid workers is not explained. We might speculate that they had never practiced their roles under stress and were overwhelmed by the intense and confusing stimuli of an actual disaster. Another possibility is that they succumbed to the example of the higher-status volunteer leaders who rushed off to the scene of impact instead of doing their jobs.

By contrast Form and Nosow (1958) report the rapid mobilization of the Salvation Army. All the members interviewed had heard of the tornado within an hour. Officers with a corps of volunteers mobilized at the Social Hall moved into the disaster area quickly and set up rescue and relief teams. The secretary at the hall took telephone calls and directed incoming personnel to the field. Communications were maintained by messenger service in the absence of telephone lines.

The Salvation Army appeared to have an extremely formal bureaucratic structure; every member had a military rank. However:

The dominant characteristic of the Army, actually, is its informal operation . . . the common bonds and sentiments members . . . . Its members comprise a religious congregation of close-knit families. The ties that bind them together are common religious, family, and class

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sentiments forged by constant personal association . . . . All members of the Army have an idea of what the organization is supposed to do in time of crisis: feed, clothe, and shelter people, and give them spiritual comfort (Form & Nosow, 1958, pp. 176-177).

Two disaster studies from other countries provide even more serious instances of poor disaster performance by ascriptively selected leaders. In a Mexican city studied by Clifford, the mayor (presidente) was the product of a personalistic, one-party system dominated by the state governor, which selected candidates for the one-party local elections on the basis of:

1. kinship ties to those in formal power positions and to other important prestige groups,
2. friendship ties,
3. repayment of past favors, and
4. evidence of personal loyalty and related characteristics (Clifford, 1956, p. 23).

The mayor's response to an early warning of possible flood danger was ineffectual.

There were no attempts to check the warnings with federal agencies such as the meteorological and water resources office that might have had special access to accurate information.

Evaluation of warnings by personnel of the presidencia (mayor's office) seemed to rest on (1) trips to see the river, (2) a strong belief that the flood could not reach the city, and (3) least of all, on the increasingly urgent warnings that were being received from various authoritative sources (Clifford, 1956, p. 40).

The mobilization of community agencies was delayed for a whole day. The day after the warnings first came, an evacuation was carried out using loudspeaker trucks to warn the population, and trucks of various local agencies to carry the population; but by then thousands were trapped by high water, and well over a hundred were drowned. The evacuation having been completed, the presidente's office took no action to alleviate the problems of some 25,000 refugees in the hills until the arrival of the state governor and the army commander.

The performance of the local government in this Mexican city was in striking contrast to the effective warning, evacuation, and relief effort of the United States city of Eagle Pass directly across

the river. There, the city administration, headed by a professional city manager, responded rapidly and energetically to early warnings, with a high degree of cooperation between agencies. Repeated efforts were also made to pass on warnings to the Mexican city.

In Holland, control over the local dykes is under the authority of local polder boards. Polder boards are headed by a dyke-reeve; the dyke-reeves form the Drainage Area Board for the locality.

> The main function of this "dyke-reeve" is organizational and administrative. The position carries with it a good deal of social prestige, and its bearer rarely knows much about tides or water levels (Nauta and van Strien, 1955, p. 13).

In a land below sea level, administration of the dykes might be thought a vital community task, and the technical incompetence of these officials comes as a shock, especially to foreigners brought up on legends of the Dutch boy and the dyke. However, the village studied had not had a serious flood since the 16th century.

> . . . these (polder) boards changed more and more into a traditional form of rigid organization with the decreasing threat of the water. As the farmers turned into a class apart, the polder boards also became more and more class organizations. One became dyke-reeve by status and seniority; in many respects the technical work was left to the foremen and overseers employed by the polder boards (p. 10).

The organizational form was also fragmented and poorly adapted to disaster, in a manner and for reasons familiar to students of metropolitan area governments in the United States.

> Resistance against a more centralized maintenance scheme must be viewed in the light of this form of organization, which acquired the character of a grouping of interest; expenses of the inner-polders were considerably less than those of the outer-polders, for they were not responsible for the maintenance of the sea-dykes (p. 10).

In 1953 a very rare combination of winds and tides raised the level of the North Sea. At low tide on the evening of January 31, the water stood at the high-water mark but no one in authority paid attention to this warning; at high tide it rushed over the dykes. The situation in one town was described as follows:

When various authorities received alarming news . . .
they tried to put the people concerned—and themselves
at the same time—at ease, without becoming alive to
the seriousness of the danger. The members of the
polder boards, too, paid little attention to the high level
of the water. There were no overall alarm systems and
there was little contact among the "dyke-reeves" who
individually were autonomous, so that everything
depended on the personal vigilance of the individuals
concerned . . . . With the decentralized polder organi-
zation, there could be no question of the general mobi-
lization of a "dyke-army." Any action was generally
taken by the lower ranks . . . (Nauta and van Strien,
p. 26).

It was quite a different stratum of the village community
which turned out under the pressure of the growing
danger. In the first place in (the village) it was those
few in whose lives the water played a certain role—the
truck driver, the municipal workman, the inn-keeper
. . . and a few polder workers. Starting from them,
a continuous line leads to a number of others . . . the
personnel of the agricultural Cooperative Society, the
two carpenters, and others (p. 27).

The local government leaders, apparently representing the
same type of recruitment as the dyke officials, responded no better.
The result was a failure to take organized action to delay the flood
waters or to warn the people until too late.

The problem of leadership recruitment arises in studies of
peacetime civil defense organizations in the United States. These
agencies appear to be something in between public bureaucracies and
voluntary associations dependent on private support. In one city, the
full-time professional head was a person without high status or polit-
ical power and lacked funds to build up his own organization. The
basic activities were farmed out to committees headed by high-status
volunteer chairmen who were capable of begging and borrowing
resources from existing organizations. The rescue committee, for
example, persuaded industrial firms to organize and equip rescue
teams.

It is obvious that this could not be done by other than a
high-status individual who can meet owners and managers
of industrial firms on their own terms (Friedsam, 1957).

Similarly the medical committee chairman had to obtain the cooperation of high-status leaders of the medical society and the hospitals to make medical preparations.

In this city the committee chairmen functioned actively both in planning and in actual disaster operation, each within his own sectors. However, the Civil Defense headquarters could not provide coordination. It had little influence on the planning, and when a disaster arose, each committee chairman operated on his own, without even coming into the headquarters, which had never been equipped with adequate communication lines. The effort to run a public agency largely through voluntary private support had resulted in recuitment of a leadership group representing various social constituencies, without allegiance to any central authority.

Organizational Role Competence in Disaster:
Prior Planning and Practice

Some of the most effective responses to disaster come from public utilities corporations. Not only do these organizations have networks of wires, pipes, etc. which give them a direct "nervous system" throughout the community, but they place a high premium on technical competence; their normal operation gives training in working under stress in small emergencies, and they occasionally have to respond to large-scale "sub-disaster" emergencies due to widespread weather damage. They have standard emergency plans which are recurrently put into action. In recent years these have been supplemented by Civil Defense-oriented plans for large-scale disasters. These plans rely on the technical competence and initiative of local personnel to take quick action, backed up by a full mobilization of the organization's resources from a very wide area beyond the struck community.

These features are illustrated in several studies. Moore describes the electric company in the Waco Tornado:

> The multi-community electric corporation supplying power to Waco, foreseeing the need for disaster planning, had drawn up a detailed plan to be used in case of a major calamity. This plan was put into operation immediately and seems to have worked excellently. For example, without any specific authorization from the company, one man quickly made a purchase of $4,000 worth of raincoats for linemen. This was one of the things he had been instructed to do when and if the emergency plan went into operation. Some persons

immediately bought flashlights and other critical
materials. Others placed emergency generators at
strategic points to take care of such places as freezing
and cold-storage plants and hospitals.

The immediate task, of course, was to make sure that
live wires were not exposed. Workmen traced the
major lines throughout the affected areas . . .
(Moore, 1958, p. 42).

The Arkansas Tornado Study reported a like response:

As soon as the power company discovered that its
services were disrupted, it put its standard emergency
plans into operation. This involved, first, locating the
main sources of trouble, and, second, moving men and
equipment into the area to deal with the problem spots
. . . (Marks & Fritz, 1954, p. 291).

The gas company had not anticipated mass damage to its under-
ground lines: "Now it never has in our wildest expectations occurred
to us that we would ever have any cyclone or storm damage." How-
ever, its employees in the community acted promptly to cut off gas
from the main valves—within 20 minutes in the village where they
were, and 45 minutes later in the next village, which they reached
with difficulty through the darkness and wreckage.

Despite the fact that no plans had previously been drawn
for this type of disaster, the gas company was able to
adapt its pre-existing emergency plans to the situation.
Individual servicemen and crews had been sufficiently
trained to cope with this somewhat unusual situation
(Marks & Fritz, 1954, p. 295).

Not all advance plans are put into effect. Notable failures are
reported in the studies of hospitals in disaster (Raker et al., 1956;
Rosow, 1955, pp. 124-128) and in some of the Civil Defense organi-
zations (Moore, 1958; Friedsam, 1957; Wallace, 1956; Rosow, 1955).
The cause of the failure in each case appeared to be the "paper"
nature of the plan—its lack of careful rehearsal to make people learn
their roles under the plan, and in some cases the failure to provide
essential equipment to make the plan workable. Hospitals are used
to acute emergencies but only of limited scale, and civil defense
naturally gets no practice in real air raids. The utility workers'
regular work, by contrast, involved periodic experience with emer-
gencies resembling disasters, including small-scale acute crises,
and large-scale mild impacts due to bad weather.

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The problem of unbalance between motivation and ability appears for organizational and professional roles as well as for family and community roles. The form which it takes is not that of absolute incompetence to deal with the kind of problems created by the disaster, but of overloading otherwise competent performers with a volume of work which cannot be handled by the normal procedures and adhering to normal standards. Unfortunately we do not have any quantitative studies of organizational or professional role performance comparable to those we have of family and community role performance, so little can be said about the conditions under which people cope more effectively with this kind of stress. We have only a collection of stories illustrating the phenomenon.

Wallace in his analysis of the Worcester Tornado interviews finds evidence of what he called the "counter-disaster syndrome," a state of overconscientiousness and hyper-activity, involving low efficiency and rationality. He notes specifically that "trained personnel, such as firemen and police and local relief personnel, are affected, as well as untrained volunteers." He quotes a fireman as exemplifying it:

> ". . . the way we were running around there like mad,
> trying to do what we could . . . sweating, oh yes. We
> were exhausted. We were exhausted, that's what it was.
> Exhaustion was coming on, because we were rushing,
> trying to do everything we could, it was really exhaustion
> that was coming on, you see" (Wallace, 1956, p. 144).

The study of medical care in the same disaster found a similar phenomenon among highly trained medical personnel. The hospitals were suddenly flooded with casualties of all degrees of seriousness, without warning.

> Under these conditions of confusion, methods of therapy
> found by experience to be best for injuries of the type
> encountered in disasters have sometimes been discarded.
> Even in experienced personnel, the pressure of work
> appears to engender an atmosphere of hasty judgment in
> the exercise of technical skills. There appears to be a
> tendency to regress in judgment under these conditions
> of psychological stress. For example, the stress of the
> disaster situation forced the abandonment of sterile
> surgical technique in at least three instances which can
> be documented . . . .

Most of the hospitals which have been hard pressed by
the flow of injured have actually performed no more than
the number of major operations of a normal working day;
but the operations were carried out at an accelerated
rate working continuously from the time of impact of the
disaster. The implication is that such a limited load of
major surgical operations could be handled in the hospitals
normally available for the care of major disaster casualties
in a reasonably leisurely fashion, with competent person-
nel, and with due regard for the usual therapeutic criteria
(Raker et al., 1957, p. 34-35).

On the individual level, Wolfenstein gives the example of a doctor
who was in the tornado-stricken area in Worcester, without any equip-
ment or helpers:

The doctor describes his own efforts to be useful, in which
he started out with the confident feeling that as a doctor he
could be of special help and where he ended with a sense
of frustration and futility. Coming first on a woman with a
wounded arm, he looked around in the debris for something
with which to make a tourniquet, and used for this purpose
an electric iron cord with an iron permanently attached to
it. As he reflected afterwards there were strips of material
lying around which might have been more suitable, but some-
how he took the unwieldy cord of the electric iron . . . .
He moved from one group to another of the injured without
being able to give effective aid . . . . Thinking in retro-
spect about what he would have done differently if he had
it to do over, he says, "I think I would do one thing at a
time instead of trying to do so many at once. Christ knows
there was a million things to do, that one can't be a god,
unfortunately. I would take care of the first woman as
completely as I could and then go on to the next one"
(Wolfenstein, 1957, p. 117).

Professionals, however expert in meeting emergency needs of
one client at a time, do not necessarily have training and experience
in coping with a massive overload of clients. The problem of to whom
they should orient their activities and how to rationally schedule dif-
ferent degrees of treatment to many clients is crucial to an effective
professional role in community disaster. This aspect of the profes-
sional role is apparently not part of the normal training and experience
of doctors. It is one of the special features of military medicine; the
report on medical care in disaster notes that "certain surgeons of
great experience and a wartime medical background" were able to
function more adequately.

Role Conflict in the Emergency Social System

There are three different ways in which people can participate in the emergency social system after a sudden disaster—as members of a formal organization, as members of a primary group, or as community members engaged in voluntary activities to help others. A serious problem arises when demands are made upon people in all three statuses at once. This is the problem of "role conflict," which is discussed in Killian's (1952) well-known essay on "The Significance of Multiple-Group Membership in Disaster."

Killian reminds us that membership in numerous groups, in each of which we have roles expected of us, is a normal condition. Usually there is a time and a place for each status and its activities; we schedule our time between working, family, organizations, friends, and so on. A disaster breaks down this normal scheduling of status responsibilities by creating simultaneously urgent needs for many of these groups. Many organizations are in trouble, many families are in trouble, and many neighborhoods are in trouble at the same time. The individual as he sees or guesses at the scope of the disaster becomes aware of multiple demands upon him of the most urgent sort. From the viewpoint of the individual, this can create psychological conflict and possibly interpersonal conflict. From the viewpoint of the community, there is the possibility that essential organizations will lose their personnel, and maintenance and disaster services necessary to reduce losses of life and property may fail.

Qualitative Findings

How far this breakdown of services can go is illustrated by one of Killian's quotations, from an interview with a fireman in a tornado-struck town who fought the incipient fire by himself until the army arrived:

> All the rest of the firemen had relatives that were hurt, and they stayed with them. Naturally they looked after them. If it hadn't been that my wife was all right, this town probably would have burned up. It's hard to say, but I kind of believe I would have been looking after my family, too (1952, p. 312).

Killian's concrete finding, based on a set of qualitative interviews in four disaster-struck communities in the Southwest, was that family roles were given priority by the great majority of persons interviewed.

Other studies likewise describe family-oriented, as opposed to organization-oriented, behavior as a first response to disaster. Form and Nosow report of the volunteer fire department in Beecher, struck by a tornado:

> Interviews indicated that in only one case was there an immediate attendance to duty. The chief, who was not in the area at the time, went directly to the firehouse. For all others, two paths of action were followed: if their families were in danger, they saw to them first; or, if their families were free of danger, they then proceeded to take some sort of action that they defined as appropriate (1958, p. 162).

Moore reports on the behavior of three key officials in a Texas tornado. The mayor, on becoming aware of the disaster while driving home, "went home, picked up his wife, and started out to see what had happened." The Director of Civil Defense was at the scene when the impact fell. After making calls to alert several disaster agencies, "he reassured himself of the safety of his family by first telephoning and then by going home." His office had a special telephone trunk making communications possible. However, the telephone call apparently was not enough reassurance. The city manager, also close to the scene, "checked with his wife to see whether she was injured" in the course of his official activities; he was able to do this because he was at police headquarters which had special lines. In his pioneer disaster study of the Halifax Explosion of 1917, Prince noted that people with families "as a rule ran first to their homes to discover if their own families were in danger." The army, which presumably consisted mainly of men whose families were elsewhere if they had any, was the earliest active organization.

One of Killian's most impressive stories of devotion to duty makes the point in its final anticlimax:

> In Texas City the chief of police remained at his post from the moment of the first explosion until seventy-two hours later, never returning to his home during the entire period and playing a vital part in the reorganization of the community. He ascribed his ability to give undivided attention to his official duties to the fact that he knew that his family was safely out of town, visiting relatives, at the time of the explosion (Killian, 1952, p. 311).

The tendency to abandon or fail to activate organizational roles in favor of family roles is repeatedly reported in the qualitative studies.

However, a few exceptions have been noted. In Texas City the oil refinery workers "did stay on the job until their units were safely shut down, as they had been trained to do." Perhaps they realized that failure to carry out the shut-down procedure might further endanger themselves and their families, or that it might endanger another primary group immediately present—their fellow workers. We lack descriptions of the deviant cases—the people who stay on the job when they do not know whether their family is safe, or when they know it is threatened. It is not clear, for instance, whether other key figures in the Waco disaster—the chief of police, the city engineer, the leadership of the public utilities and the Red Cross—also were able to check on their families, or stayed on the job regardless.

We have one well-described case, the mortician in the Flagler airshow disaster, who alternated between his family and his professional role, experiencing great conflict. His playing the professional role at all—when his wife was seriously injured and his daughter apparently dead—was explained by him in the following terms:

> I was in a dilemma at first because I knew people would
> expect a lot of me. It isn't like the city where they
> wouldn't know you. But everyone here knows me . . . .
> People figured I'd help in any situation that comes up
> even though it isn't death. In a small town like this,
> people expect the undertaker to be human and do all kinds
> of good deeds . . . . It was hard on me to work with my
> attention divided between the hospital, the mortuary, and
> my family. I would go up and look at my wife and child
> in the operating room, and then down to the morgue, and
> then over to the hospital, and then back to the mortuary
> . . . . It didn't get me until about 4:45 when they were
> giving my wife and child plasma. I was over at the
> hospital, and I broke down completely. Yes, I was crying
> and sobbing from nervous tension. A woman walked up
> to me around behind the hospital and said, "You can't do
> this now, you've got a lot to do yet" (Marks & Fritz, 1954).

Once his family was in the hospital, his practical role toward them was done for the time being—he could only "go up and look." From that point the conflict was more between his professional role demands and his anxiety which sought expression.

The respondent here indicates the unusual social visibility of his position in this small community, where everybody knew him and expected him to perform his professional role. When the strain overcame him and he lost control, a community member did indeed come forward to remind him of his professional responsibility.

The job versus family role conflict was solved for most individuals described in these qualitative studies by the existence of clearcut role priorities favoring the family; this spared them the strains experienced by the Flagler mortician. The consequence for the organizations and the community, of course, were not so favorable; key organizational roles were not performed, whole organizations were inactivated, and major dangers to community safety were incurred.

A study of occupational values of college students gives a sidelight on the problem of priorities of family versus occupational roles. The doctor's occupational role involves constant dealing with emergencies to individuals. There is probably more conflict between family and professional role among doctors in normal times than among most other groups. Students were asked in 1950 what they expected to provide their main satisfaction in life, their family or their career. Among those who planned to be doctors at that time, over half replied, "family." Two years later, a large majority of these had changed their plans: (Rosenberg, 1957)

	Main life satisfaction will be:	
	Career	Family
Still plan to be doctors, 1952	80%	33%
No longer plan to be doctors	20	67
	100%	100%
	(20)	(27)

This suggests that social mechanisms for weeding out those whose values are inappropriate to the demands of the role are already at work in the first two years of college. It is thus possible that certain occupations will recruit many people whose commitment to their job would override their family responsibilities. It would be useful to have data on the behavior of doctors who were at the office or hospital in community disasters which might have threatened their family.

Conflicts between responsibilities to organizational roles and the needs of individuals other than family members—friends, relatives, or individual victims generally—were sometimes resolved in favor of organizational roles and sometimes in favor of individual victims. Killian (1952) reports that "the choice made by a state patrolman between his role as a police officer and his role as a friend and neighbor to the people of the community" was quite difficult:

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> . . . I realized the best thing I could do was to try to
> make contact with the outside and get help from there
> . . . . As I drove out of town people I knew well would
> call me by name and ask me to help them find their
> relatives. Driving by and not stopping to help these
> people who were looking to me as a friend was one of
> the hardest things I ever had to do (p. 312).

However he did it, and "recruited and organized a large force of
rescue workers in a nearby community."

A minister in Texas City went toward the docks to try to help
in the rescue work:

> But on the way down I saw two or three folks I knew who
> had husbands down there. I saw then that my job was
> with the families—not doing rescue work. I had a job
> that I was peculiarly suited for, prepared for, and I felt
> that I should do that (p. 312).

In this case his organizational clientele was on hand, perhaps appeal-
ing to him to perform his professional role rather than the role of
amateur rescuer.

> A similar dilemma faced many public utilities workers
> who were forced to disregard the plight of the injured if
> they were to perform their task of restoring normal
> community services. Unlike the minister and the patrol-
> man, these workers reported no awareness of a conflict
> of roles, regarding it as a matter of course that they
> concentrated on their often quite dangerous jobs. Some
> indicated that preoccupation with the job was so intense
> that they were scarcely aware of what went on around
> them (pp. 312-313).

Here the fact that the utility workers were presumably drawn from a
wider area and without strong ties to a local population might help to
account for their freedom from organization versus individual victim
conflict, even though their job skills were clearly relevant to rescue
work, unlike the minister's.

The Beecher Tornado study provides an instance of the almost
complete disintegration of a disaster-relevant organization in the face
of the appeal of immediate informal rescue work for individual victims:

> Only one-quarter of the firemen interviewed indicated
> that they went to the station before they did anything in

the field. Most of them did something else because they defined this disaster as one which they, as firemen, would not deal with in a traditional and expected way . . . . In the midst of a tense empathic climate, the Beecher firemen were dominated by the needs of the injured. The interviews indicated that the firemen were most concerned about getting their friends and neighbors out from under the debris . . . . Most of the Beecher firemen worked all night as members of informal rescue teams, directing traffic, comforting victims, and performing other tasks (Form & Nosow, 1958, pp. 162-163).

This type of behavior, whether directed toward one's family, friends, or neighbors, while often eliciting heroic efforts, did not facilitate the functioning of a coordinated and integrated rescue system (p. 168).

This specialized organization apparently lacked training for organized activity outside the traditional fire-fighting situation. It also suffered the distractions of demands for individual help from friends and neighbors, resulting from the exclusively local base of recruitment.

Killian's study also considers instances of conflict between loyalty to friends, fellow workers, and community members on the one hand and to organizations which were not performing a disaster-relevant role, and which mainly represented the interests of groups outside the community. Of the conflict between loyalty to the company and to the workers, one plant official commented:

Property! Nobody gave a damn for property. All that was important was life. I've often wondered just how it would be to walk off and let a plant burn up. That was the way it was. We didn't even consider fighting the fire (Killian, 1952, p. 313).

And in one disaster-struck community, telephone workers resigned en masse from their union rather than resume a strike a few days after the disaster, when they did not consider the emergency needs to be over.

While these are said to represent the dominant pattern, examples are given of the opposite response. One union did obey orders to go back on strike a few days after a disaster. One company official was mainly oriented toward looking after the company's property. In the latter case it is noted that "he had never lived in the community and scarcely knew his workers." The factors which differentiated the

two unions are not indicated. However, the traditions of occupational solidarity have been studied in many other situations, and it is not surprising that they can rival community loyalties. The labor movement's solidarity has grown out of its own history of disasters, both economic and physical.

Quantitative Findings on Role Conflict

We are very short of quantitative data on the incidence or outcome of role conflict. Form and Nosow, in their analysis of interviews with a rather unsystematic sample of informal rescue workers in the Beecher Tornado, do classify them according to whether they at any time subjectively experienced any form of role conflict. The state of the disaster at which it was experienced, the roles which were in conflict, and the resolution are not indicated. The only distinction made is between those who experienced an internal conflict between different felt obligations, and those who experienced disagreement between themselves and some other over which obligations to honor. Their findings may be summed up in Table 2-10.

No data were given on the extent of overlap between intra- and interpersonal conflict. However, the internal and interpersonal conflict seem to be oppositely related to the background factors. Intrapersonal role conflict was highest among those separated from their families; while interpersonal role conflict was highest among those with their families. Presumably those who were separated from their families were involved with other roles, which they had to leave to reach their families. Why this should cause internal but not interpersonal role conflict is not clear, as is the reason for the high rate of interpersonal conflict among those who were with their families in the impact area. Other unanswered questions are raised. Why should women have over twice as much interpersonal disagreement as men, and yet no more internal conflict? (And, if they disagreed with men about what to do, why don't the men report the same rate of disagreement?) Why should the old have more disagreement with others but less internal conflict? Given the small number of cases and the lack of details on the time and the social relationships involved in the conflicts, it is probably fruitless to speculate. More research along these lines, with enough cases to permit systematic analysis, is plainly needed.

The one point on which the evidence of the Beecher study is fairly clear is in relating the experience of role conflict to the occurrence of individually non-adaptive behavior, largely in the form of panic or shock. It appears that interpersonal disagreements over

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TABLE 2-10

Factors Related to Incidence of Intrapersonal
and Interpersonal Role Conflict

	Intrapersonal role conflict (per cent)	Interpersonal role conflict (per cent)	N
Location at time of impact			
With family in impact area	13	25	(52)
With family in periphery	13	13	(30)
With family outside area	18	9	(11)
Separated from family, family closer to impact	26	13	(15)
Separated from family, respondent closer to impact	25	0	(8)
Sex			
Male	17	12	(69)
Female	15	30	(47)
Age			
Under 20	13	7	(15)
20 - 44	18	18	(71)
45 plus	11	22	(27)
Injury status			
Family member injured	20	36	(25)
Respondent injured (15 to 17 cases also had family member injured)	23	23	(17)
Family members uninjured	15	12	(91)

Source: Form & Nosow, 1958, Tables 11, 12, 13.

role obligations do not have such consequences, but that internal
conflict had quite notable effects in this direction. The lack of orderly
role priorities within the individual seems to be closely related to
failure to perform either role and perhaps to becoming dependent on
others.

To what extent the group experiencing intrapersonal role conflict
overlaps with the group discussed in the previous section who experi-
enced "means conflict" is not indicated. It is plausible to assume that

either type of difficulty, under the extremely high motivation of the disaster situation, would lead to deviant behavior; and for many in this plight the only accessible resolution would be psychological withdrawal.

TABLE 2-11

Per Cent Experiencing Panic or Shock,
Related to Role Conflict

	Per cent Experiencing Panic or Shock	Number of Respondents
Those who experienced intrapersonal role conflict	47	(19)*
Those who experienced interpersonal role conflict	20	(20)*
Total sample	21	(116)

* Categories not necessarily exclusive
Source: Form & Nosow, 1958, Table 10.

An ingenious effort to make up the deficiency of systematic data on the incidence and outcome of role conflicts is the study by Meda Miller White on "Role-Conflict in Disasters." Going back eight years later to three tornado disaster communities which had been previously studied (Waco, Flint, and Worcester), she interviewed members of disaster-related organizations systematically about their behavior. A population of disaster-relevant organizations was defined: city government, police, fire department, state police, power company, gas company, radio stations, hospitals, Red Cross, Salvation Army, and Civil Defense. Within these organizations one person of middle rank and three persons of lower rank were randomly selected from the lists of members at the time of the disaster, as well as the de jure leader at the time. Of a total of 166 people so selected and available for interviewing, 128 were interviewed before financial reasons terminated the field work. The intention was to test systematically Killian's finding that organizational roles were generally abandoned if the family was not known to be safe.

Quite early in our interviewing . . . we began to turn up cases that could not be explained in terms of Killian's findings (White, 1962, p. 12).

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Respondents who were faced with the most lacerating decisions felt that they had no choice. Men of high responsibility and training defected, while men of low responsibility and training stayed on the job. Men who thought their families were endangered worked with their organizations, while men who knew their families were safe still did not report for duty (pp. 15-16).

To explain these anomalies, White developed a theory on a higher level of generality, incorporating elements from earlier analyses by Wallace, Wolfenstein, and others into a new model. This theory assumes that the decision between roles is made under unique conditions of stress and is therefore not characterized by a rational balancing of alternatives with all the anxiety which this can imply. These stresses are said to derive from two factors:

1. The retroactive fear of death which follows a narrow escape, and which results from the awareness of forces which deal death and destruction at random. The survivors "are left doubting their ability to survive either by their own efforts or by their merits. Furthermore they see that even the community as a whole is unable to protect the lives of its citizens. They are strongly motivated to restore their faith in the adequacy of themselves and their community by taking effective action against the disaster.". . (White, 1962, pp. 17-18).

2. "Scarcely does the subject realize that he might have been rendered homeless, injured, or dead, than he is fervently glad that it was others who suffered instead. . . . A flood of guilt follows and the subject then feels that he would gladly sacrifice all to make it up to those who suffered such losses in his stead" (p. 18).

It is White's hypothesis:

. . . that in the midst of all this uncertainty the individuals who have role-conflicts will solve them by grasping at what I call the "first certain solution." By "first certain solution" I mean the first course of action for which (1) the problem is clearly defined, and (2) there is something the individual can do to help solve the problem. Put in more familiar terms, the individual will jump at the first chance to do something to help. Because he so strongly wishes to avoid failure he will try to disregard any evidence that his efforts are failing or futile. For the same reason, once he

has made his choice he will try to dismiss from his mind
disturbing thoughts of other courses of action he might
have chosen, other responsibilities he might have met
instead. Thus whether he chooses to serve family or
organization, he will tend to minimize internal conflict
by dismissing thoughts of the other.

For these reasons, it is of key importance in role-conflicts
whether opportunity to serve family or organizations comes
first. Instead of predicting that the family will win the
majority of role-conflicts, we have predicted that the
winner will be whichever opportunity arises first (1962,
p. 19).

The organization members who were interviewed were there-
fore cross-classified on two scales, measuring their certainty of their
opportunity to serve the organization, and their certainty of their
opportunity to serve the family, at the time they became aware of the
disaster. On each scale respondents were classified as: (1) certain
he is needed based on definite information possessed at the time;
(2) feels needed but not certain, information inadequate; (3) feels
ambivalent, cannot decide if needed; (4) feels not needed but not cer-
tain; and (5) certain not needed, based on definite information. Note
that this is a measure of certainty, not of intensity; it is largely
cognitive.

Respondents who left their job to check on their families, drove
out of their way to check on the family, were delayed, or did not report
to duty at all, were said to have let their families interfere.

Several major findings can be derived from Table 2-12.

1. The marginal distributions: Many more of these organiza-
tional members felt, at the moment of crisis, certain of the organi-
zation's need for them than felt certain of their family's need for
them. Indeed a large number of members were definite in their
knowledge that the family did not need them, while hardly any were
definite that the organization did not need them. (Note that the organ-
izations were all selected as disaster-relevant; a random sample of
all formal organizations would not have such a one-sided distribution.)

2. The main diagonal: Number of cases: Relatively few
respondents reported that they were needed by both—none reported
certainty of need in both roles. Only 8 sample members felt needed
or were undecided in both roles at the same time.

3. The unbalanced Cases: Choice of role: Wherever the organization need was more certain than the family need, the organization won out. Conversely, in the few cases where the family need was more certain, the family won out.

4. The low-need quadrant: Choice of role: In the few cases where the respondent felt or was certain that he was not needed in either role, he performed neither.

5. The main diagonal: Choice of role: In the few cases where the respondents felt equally certain that they were needed, or were equally uncertain, they split. There were only eight such cases, and the family won out in six.

TABLE 2-12

Per Cent Performing Organizational Role Without
Interference from Family Role

Need of Organization	Need of Family					Total Number of Respondents
	Certain needed	Felt needed	Unde-cided	Felt not needed	Certain not needed	
Certain needed	-- (0)	100 (6)	100 (22)	100 (12)	100 (31)	(71)
Felt needed	0 (3)	50 (4)	100 (7)	-- (0)	100 (6)	(20)
Undecided	-- (0)	0 (3)	25 (4)	100 (2)	100 (8)	(17)
Felt not needed	-- (0)	-- (0)	-- (0)	0* (1)	0* (5)	(6)
Certain not needed	0 (1)	-- (0)	-- (0)	-- (0)	0* (2)	(3)
Total number of respondents	(4)	(13)	(33)	(15)	(52)	117**

*These individuals played neither organizational nor family role but withdrew.
**Total after excluding 11 cases of non-residents or people involved in other conflicts than family versus organization.

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As a consequence of these one-sided distributions of certainty of need in favor of the organization, we find that 77 per cent of the members did their jobs first, without serious diversion to family roles. Furthermore, by the end of the first four hours, these were joined by another 12 per cent who had finished checking up on their families, while none of the respondents once started on organization work abandoned it to check on his family. The stability of role performance, resulting from the presumed psychological "blinders" the respondents wore, was noteworthy.

This finding contradicts the conclusion that has frequently been drawn from the Killian study. White finds an explanation in the unusual ecology of the Texas City disaster studied by Killian: the workers' homes were next to the dock area where the ship exploded. These homes caught fire, and the workers could see that they had caught fire. The distribution of members in the typology of role conflicts was thus heavy in the direct, drastic conflict which is totally missing in White's interviews from the three tornado cities, with their long, narrow strips of destruction surrounded by safe areas.

The results of White's study need careful checking in additional disaster situations, both to overcome the problem of eight-year retrospection and to systematically cover cases of other types, including the Texas City type, where the distribution of certainties is different. It must be emphasized that the finding of White's study is not that "the great majority of people choose their organizational role over their family role" but that they will do so under certain conditions, which prevailed in the three tornado disasters she studied. In other types of disaster—exemplified by the Texas City explosion— the distribution of knowledge about the needs of the family may be quite different. In the case of an atomic attack, the visible extent of fires or the detectable extent of radiation might create a certainty of family danger over a wide area, similar to the Texas City situation.

In an extension of her analysis, White suggests that people whose jobs are highly structured, with a high degree of routine and close social relationships on the job, are more likely to find the certainty they seek in playing their organizational role than people whose jobs allow them greater discretion or involve less informal relationships. She has devised an index to characterize the regular, non-emergency organizational roles of the members of disaster-relevant organizations and finds that it predicts the member's feeling of certainty that he is needed on the job. From this she draws the implication that to secure performance of organizational roles in disaster requires that these organizational roles be full-time, routinely practiced in normal times as well—the situation typical of police, firemen, military and public utility workers.

Motivation for Roles in the Emergency Social System

We have been assuming so far that people are highly motivated
to play one or more roles in the emergency social system which follows
disaster, and that their problem is lack of preparation in the required
activities and relationships, or conflict between needs to play roles in
different groups at the same time. Motivation for primary group roles
can be taken for granted in disaster; they rely on long-standing emotional
ties and on the most strongly-supported community expectations.

Formal organization roles—provided that they are not super-
seded by primary group roles—appear also to have adequate motiva-
tion even in disaster where their performance involves risk and
difficulty out of all proportion to their purely pecuniary rewards.
Most members of disaster-relevant organizations are sufficiently
attached to the organization and its goals, or at least to their imme-
diate work groups, to work on a completely non-economically motivated
basis in a disaster situation. The dedicated performance of public
utilities workers, hospital personnel, firemen, policemen, and
employees of commercial firms capable of assisting the disaster
effort is well documented in qualitative disaster studies. We do not,
unfortunately, have adequate surveys of organization members'
performance of community service work in disaster comparable to
the studies of work output and morale in industrial situations in which
individual or small group economic interests predominate.

Motivation is more problematic for disaster activities arising
out of the status of "community member." This comes close to being
a "role-vacuum" (Leeds, 1961). Normal relations between community
members in Western urban society involve few obligations and little
emotional attachment. Large numbers of American families have
suffered conditions as bad as those of physical disaster in big-city
slums, during the great depression, in the Dust Bowl, in migrant
labor camps, or in declining mining towns without arousing a mass
outpouring of help. Millions suffer pain, hunger, and avoidable death
in far-off regions of the world without arousing the natural instinct to
save life. While in normal times there is always a small proportion
of "bleeding hearts and do-gooders" who support efforts to relieve
human suffering, particularly minority religious or ideological sects
like Quakers or socialists, the arousing of a spirit of altruism in a
large part of the population is actually a most unusual event. Let us
examine how it comes about.

The sudden needs created by a disaster are usually unprecedented
or very infrequent in the lives of the people concerned. (This is not
true of disaster-prone occupations like mining, fishing, and shipping,

where the groups involved have long-developed patterns of mutual aid.) There is a rather vague obligation to save life and reduce suffering in emergencies, which most people have never had to implement.[2] It seems likely that the interpretation of this community member disaster role is much more dependent on individual emotional response and on immediate environmental stimuli than most other roles. As a short-term, one-time activity, this role is not subject to repeated trial and correction in group interaction over a long period, although within each face-to-face group some short-term consensus may be developed during interaction in the emergency. The role is thus likely to be highly variable between persons and small groups. To the extent that it shows regularities, these may depend more on the distribution of individual emotional responses to like situations than on any prior or evolving social consensus.

To a considerable extent the response of the unprepared community to disaster depends on arousing unusually strong motivation to compensate for the low efficiency of the spontaneous, unorganized effort. The factors influencing individual emotional response to the needs of the victims are thus crucial to the community system.

Visibility of Needs

One obvious factor in motivating people to help other people to whom they have no specific social ties is their perception of the needs of the victims. The suffering normally present in a community is segregated, cut off from the general public view. It takes place in slums where respectable people do not go, in skid rows, or behind hospital walls. Victims of random errors in the automobile traffic system are quickly removed and the blood and broken glass cleaned up, so that 40,000 unnatural deaths a year can be tolerated without interference with vested interests or public preferences. Public begging by cripples displaying their deformities is legally discouraged, and replaced by more respectable and bureaucratic forms of fund-raising for the handicapped. Individual and family disaster takes place in private; collective disaster strips away the screens and parades its suffering, for a while at least.

For people in an area of physical impact, the needs of the victims are directly visible to potential helpers. The normal walls which divided people are literally knocked down, and the attraction of the unusual event draws people out of the undamaged houses into

_____

[2]"The Lord above made man to 'elp 'is neighbor... but—with a little bit of luck... when 'e comes around you won't be 'ome."

the streets to see what has happened. The direct, first-hand perception of need and suffering are plainly the most potent means of arousing sympathy.

If directly seeing the victims tends to produce powerful motivation for community-oriented activity, then anything which quickly draws large numbers of people into the impact area will contribute to spreading this motivation. Thus it is reported that many who were initially drawn into the area to check on the safety of friends and relatives, stayed to help other victims when they found their primary-group members all right. Those who came to stare often remained to help when they were confronted with the manifest need. This mechanism works, of course, only as long as there are needs visible to casual inspection. Likewise, the streaming out of victims into adjoining areas presents visible needs to residents of those areas which—if not counterbalanced by perceived threats—should arouse the desire to help.

A striking example of the effects of visibility is found in studies of migrant farm labor and dispossessed farmers. The continued tolerance of mass suffering and lack of opportunity among such a large body of families in an affluent society is attributed in part to the "invisibility" of these transients. Carey McWilliams (1944) writes:

> They have, in fact, an extraordinary faculty for making themselves inconspicuous; they are the least noticeable of people and the most difficult to locate. Nor is their inconspicuousness accidental. They are forced by circumstances to be inconspicuous. Many of them travel by night, not because they prefer to do so, but because they have old license plates on their cars and are anxious to avoid highway patrolmen. For the same reason, they frequently travel along minor highways and make many detours and pursue zigzag routes . . . .
>
> If they were deliberately avoiding detection, they could scarcely do a better job of concealing themselves. When they camp along the way, it is usually in a clump of trees or under a bridge or around the bend of a street out of sight. Good-sized camps of this character may exist under bridges over which thousands of motorists pass every day utterly unaware of their presence.
>
> In California there are 5,474 private labor camps in agriculture, yet you can drive the main highways of the state, from one end to the other, and never see a labor camp (p. 6-7).

It was simply by becoming visible that one group of share-croppers, evicted from the land, found a weapon in their struggle against economic disaster:

> Motorists zooming along the highways, on the morning of January 10, were surprised to see these strange makeshift encampments on either side of the highways in which an army in rags and tatters—an army without banners—was bivouacked, at intervals, along 150 miles of open road. Exhibited along the highway were most of the worldly possessions of the sharecroppers: dogs, children, goats, tin cans, ragged tents, and sheet-metal stoves. The camps themselves were eloquent and irrefutable evidence of poverty and desperation. Nor could the evidence be ignored: it was there for all the world to see (p. 289).

The response of the organized agricultural community was prompt: the roadside camps were broken up and the ex-sharecroppers moved out of sight.

Even where direct sight of the victims in their time of need is not available, the dramatic unusualness of sudden physical disaster on a large scale arouses interest and stimulates communication. No quantitative studies have been made, but it is reported over and over that the main topic of conversation for days afterwards was the disaster. This interest is reflected in the local press and radio—content analysis by Moore of the Waco newspapers and descriptions of radio and broad-cast content show the disaster's intense domination of the formal communications media as well as the informal. A slum can fester for generations attracting only occasional attention from the mass media and concerning few outside its own boundaries; a dramatic disaster is a fascinating topic of conversation for all. One way of looking at the problem is to see human suffering as distributed over time and space. Sharp differences in the rate of suffering between areas are apparently easily tolerated by the population; sudden changes over time are objects of general concern. This leads us on to the problems of identification with victims, and the ideological justification of suffering.

Relative Deprivation and the Choice of
Comparative Reference Group

The visibility of suffering is distributed in such a way as to produce a rather remarkable consequence. Those who are the victims of a disaster are the most vividly aware of the suffering of others.

Furthermore the victims generally compare themselves with those who suffered the most extreme deprivations—with those who were killed or who lost a family member. Even for those with severe property losses and personal injury, the gap between their suffering and that of people who lost loved ones, or the fate of those who were killed, is so great that they feel relatively lucky. The fate of a few who suffered extreme losses permits most of the other victims to feel relatively well-off, and to feel responsibility to help others, or to let others be helped first. This psychological mechanism of "relative deprivation" tends to maintain community-oriented motivations in the face of severe personal deprivation (Merton, 1957, pp. 225-280).

Conversely, those who were more lightly struck may be subjectively worse off and less motivated to help others, because they are less likely to have direct knowledge of, or personal identification with, one of the worst-hit families. The result may be that the victims actually do more for one another than the non-victims do for the victims. The behavior of the two groups is of course influenced by the availability of opportunities to help as well as by motivation to help, so we cannot draw definite conclusions from figures on activities alone.

Some suggestive evidence is given in the NORC Arkansas study. Unfortunately we do not have precise data on the interpersonal environment or exact spatial location of the respondents. However, it is possible to show that the feeling of being relatively better off than others increases with objective loss up to the highest loss category, and that participation in community-oriented activities of rescue and relief, and work with voluntary disaster organizations do likewise. The pattern is not perfect, but it is certainly more in accord with the relative deprivation hypothesis than with the contrary, rationalistic assumption that the least damaged feel the best off and do the most to help others (Table 2-13).

The compensating effect of the relative deprivation mechanism obviously has its limits. The high personal loss category (those who had a death or severe injury in the household) generally do not feel less deprived than others, and their participation in helping others outside the family is lower than most other groups (although by no means negligible). The highest proportion feeling less deprived than others is among those with medium personal loss—some injury to a household member, or death to a non-household relative or close friend. Among those without serious personal losses, those with only medium property damage were subjectively worse off and less active than those with high property damage; and those outside the impact area with no loss include fewer who feel less deprived and fewer who are active in helping others than those with some loss. The researchers

TABLE 2-13

Feelings of Relative Deprivation and Participation in
Community-Oriented Activity Among Groups with
Varying Objective Losses

Objective loss	Feel less deprived than others (per cent)	Active community orientation (per cent)	N
High personal loss	28	39	(18)
Medium personal loss	56	58	(66)
High property damage only	42	55	(31)
Medium property damage only	38	33	(24)
Non-impact: some loss	53	66	(30)
Non-impact: no loss	28	44	(128)

Source: Marks & Fritz, 1954, Table 9-36.

suggest that these categories conceal differences in location—the high
property loss people were more likely to be in the center of impact
than the medium loss people, while the non-impact people with some
loss were close to the fringes of the impact. As a result there was
differential access to seeing the most severe sufferers, and differential
opportunity to help them. The medium property loss people had enough
loss to preoccupy them in the absence of strong stimuli from other
sufferers; the some-loss non-impact people had relatively trivial
losses. Those outside the impact area with no loss were less likely
to help other community members partly because of less opportunity
and partly because of less motivation.

What is suggested here is a phenomenon of balance between
one's own loss and stimuli concerning losses of others. Intense
stimuli from other sufferers overcomes preoccupation with one's
own losses except among the most severe sufferers; a relatively mild
loss in the absence of close contact with other sufferers produces a
feeling of deprivation and self-preoccupation. This last situation
occurs normally in accidents and other deprivations which single out
particular individuals or families. The contrast between ordinary
accident victims and disaster victims is repeatedly noted in the
literature.

Further evidence of the reference-group mechanism is found if we compare respondents community by community. The number of cases is very small, and only three community areas are available for comparison; nevertheless the results are strikingly in accord with the reference group hypothesis, and strikingly opposed to a common-sense expectation (Table 2-14).

TABLE 2-14

Objective Losses and Feelings of Deprivation
in Three Areas in the Arkansas Tornado

	Judsonia (per cent)	Rural Judsonia* (per cent)	Doniphan (per cent)
Objective loss:			
High personal loss	16	9	6
Medium personal loss	49	53	29
High property only	23	29	6
Medium loss only	12	9	59
Subjective loss:			
Great deprivation (absolute)	11	18	18
Some—not bad as might have been	56	43	53
Moderate, slight, none	20	29	18
"Less deprived than others"	51	43	29
Number of respondents:	(86)	(34)	(17)

*In this table "rural Judsonia" apparently includes Boldingsville.
Source: Marks & Fritz, 1954, Tables 4-51, 9-19.

The proportion of males who engaged in rescue activities in the three areas—based on about half the total number of interviews shown above—was 62 per cent for Judsonia, 40 per cent for rural Judsonia and Boldingsville, and 13 per cent for Doniphan. This largely reflects the much more serious losses in the former two, and particularly in Judsonia where collapsed brick buildings provided a long and difficult rescue job. It is possible that the experience of doing rescue work tended to produce a feeling of being less deprived than others, which overcame the objectively much more severe losses experienced in Judsonia. This feeling of relative non-deprivation would then tend to reinforce further rescue and relief activities, which would in turn maintain awareness of the plight of the most severe sufferers.

Identification and Membership Groups

Confronted with a given intensity of stimuli about someone else's suffering, we react differently according to who the victim is. If it is a member of our primary group, we have a strong identification with the victim—we care about him as part of ourselves. If the victims are strangers, they may still be members of our secondary groups— residents of our neighborhood or town, members of the same class or ethnic group, citizens of our country. They may also have varying degrees of likeness to us; they too may be parents of small children, owners of a small house, lovers of poetry, school teachers, or farmers, "just like us."

Three types of identification seem to be involved here. One is a long-standing primary identification in which we automatically respond to the other's needs as we would to our own. A second is a secondary-group identification involving moral responsibility to help other group members. This may at the same time exclude the duty to help non-members, in a kind of division of moral labor—we will look after our own, and let the other groups look after their own. The third type is an emotional identification or empathy based on similarity: they are just like me, they have the same feelings that I do, how would I feel if that happened to me, I cannot allow them to suffer so. This may be carried to the extreme of universal identification in which any human being who suffers is an object of concern no matter how different his way of life or appearance.

The primary identifications, group identifications, and identifications based on similarity serve to reduce confusion about what to do in a crisis by assigning priorities and setting limits on our responsibilities. Generally there is a rapid falling off of our identification with people who are remote and different from us. In traditionalistic societies there was quite strong identification with the people of the locality—the extended family, the village community; but contacts and feelings of identification fell off rapidly as one moved away from this close-knit nucleus. In modern societies ties of community and extended kinship groups are much weaker. An ideology of individualism denies clan and community responsibilities, encourages social distance, and tolerates suffering quite nearby. Suffering is rationalized as being due to the moral weakness of the individual sufferers who didn't work hard enough or plan rationally enough. An individualistic society cuts the individual or the nuclear family loose from membership groups and minimizes identification with others.

At the same time modern communications media—perhaps especially the visual means of reporting—and modern mass education

enormously extend our knowledge of what goes on in other places, and our ability to see and empathize with other individuals. The most effective communications arousing sympathy for victims of fascist and militarist governments during World War II were probably the photographs—the little Polish girl weeping over her dead sister in the field, the Chinese baby crying alone amid the ruins of Shanghai, the piles of dead and dying in the Nazi death camps. The most effective propaganda against the British-American policy of mass bombing of civilians in World War II—available only after the war—are the photographs of the victims of Hamburg and Hiroshima. It is possible that modern news media could produce the psychological basis of identification with suffering anywhere among people everywhere in the world. How this universal empathy could be handled psychologically and socially is a most interesting question. The erosion of the laissez-faire ideology of individualism and its replacement by the ideology of the welfare state is probably one response found in all countries. The development of internationalism and the concern for underdeveloped areas is an extension of welfare ideology to the world society.

The social and spatial ecology of concern with the victims of natural disaster has not been carefully studied. We do have certain pieces of evidence from the surveys of the Arkansas and Beecher Tornadoes. The Arkansas Tornado study interviewed not only persons within the impact area in four townships but also a sample of residents of the four townships who were outside the impact area. The comparison of the skilled and non-skilled people in the impact and non-impact areas given earlier can be reexamined in terms of the ecology of response. It comes as no surprise that rescue work during the first half hour and rescue work generally was much more frequent among impact area residents—immediate physical access to victims is necessary to play that role. The problem of access is reflected in the opposite direction in the figures for medical-hospital work and volunteer work for formal relief agencies; these facilities were located mainly outside the impact area and could be more easily reached by non-impact residents.

When the various forms of community-oriented disaster activity are combined, we find relatively little difference in participation for the two areas—a little over half in the impact area, a little less than half outside. If physical access is held constant, the motivation to general community rescue and relief work apparently was high throughout the community. Descriptive evidence shows that there were efforts to send help from cities and towns still further removed from the scene. It is almost impossible to equate the opportunity factor, and therefore hard to say anything on this basis about the relation of the motivation to help to distance. A survey of people drawn from a wider surrounding

area, about the intensity of their concern for the disaster victims and willingness to help given the opportunity, would tell us much about the ecology of concern with sufferers.

Form and Nosow (1958) give two relevant pieces of data. First of all they have a small number of interviews with residents of rural areas which were hit (Table 2-15).

> The concern of the rural respondents for people in general ceased after the second phase. Apparently, once having cared for themselves, their families, and their immediate neighbors, they withdrew from disaster activities almost entirely. This was so despite the fact that there was heavy damage and loss of property in nearby areas. These data suggest that in this instance rural dwellers defined their "neighborhood" as constituting only immediately adjacent families (p. 81).

TABLE 2-15

Per Cent of Acts Oriented Toward Other Community
Members Generally for 19 Rural and 97 Urban Residents

Number of Acts = 100%		Phase I	Phase 2	Phase 3
	Urban:	180	194	157
	Rural :	32	33	16
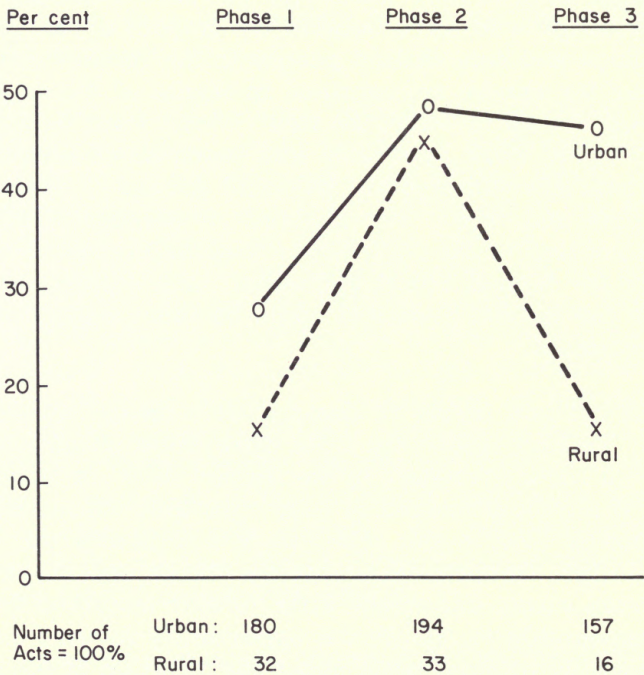
Source: Form & Nosow, 1958, Table 7.

Form and Nosow also tried to measure community identification by an index which counts the number of local organization memberships, number of local friendships, and degree of expressed pride in the community (Table 2-16). Those with higher community identification were much more oriented to others generally in the first phase (the period before local disaster organizations appeared on the scene) although the difference disappeared for later phases.

TABLE 2-16

Per Cent of Acts Oriented Toward Other Community
Members Generally, for 41 Actors with High
Community Identification and 59 Actors
with Low Community Identification

Per cent	Phase I	Phase 2	Phase 3

High identification

Low identification

| Number of Acts = 100% | High : | 86 | 84 | 73 |
| | Low : | 100 | 106 | 78 |
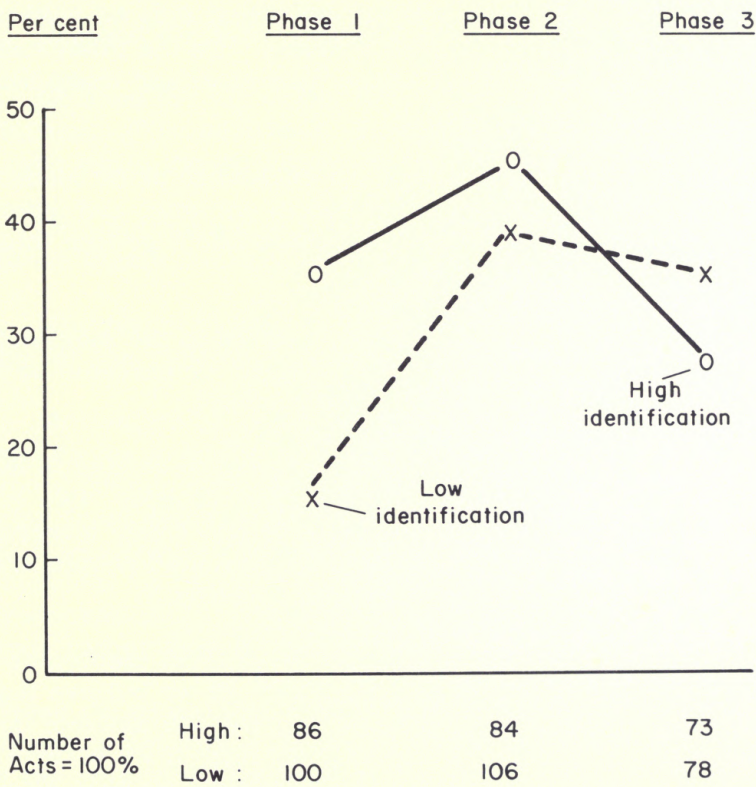
Source : Form & Nosow, 1958, Table 6.

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Summary: Individual Processes Influencing Community-oriented Motivation

We can now try to sum up what has been suggested about the processes by which motivation to play community-oriented roles is created. These processes are largely intra-individual; they are derived from the psychological analysis of Wolfenstein and the social-psychological speculations of Fritz concerning the individual bases of the altruistic community of disaster sufferers. Each relationship can be written out as a proposition:

1. The closer we are to the impact area, the more likely our objective losses are to be high.

2. The closer we are to the impact area, the more access we have to direct perception or communications about the victims.

3. Knowledge of others' losses may be reduced if the individual's own losses are severe. (The hard-hit individual may be inattentive or inaccessible to communications about others. On the other hand, it is possible that slight losses sensitize the individual and make him more attentive to losses of others.)

4. Knowledge of others' losses is related to prior identification with those others. (We read about losses in our town and ignore suffering in remote places; we are concerned about getting information about people we know.)

5. Knowledge of others' losses is related to the magnitude of those losses. (One hears more about dramatic or extreme or large-scale events than about small, "routine" losses.)

6. Knowledge of others' losses is related to access to direct perception or indirect communications of those losses. (We learn about events in our own neighborhoods; sociometrically integrated people are more likely to receive the news; educated people are more likely to know about remote events through reading.)

7. Explanation of losses is related to general ideologies concerning the causation of events of that class. (If we believe that there is always a market for labor at some price, we will assume that the unemployed are to blame for their own problems; if we believe that earthquakes are an act of God, sent to punish sin, we may blame the victims for their suffering.)

8. Our own subjective loss is related to our objective loss.

9. Subjective loss is diminished by knowledge of losses of others. (This is the relative deprivation hypothesis—the others whose losses we know of, and especially the worst sufferers, become a comparative reference group. On the other hand the belief that the whole community has been destroyed may intensify feelings of loss.)

10. Sympathy toward the victims is reduced by our own subjective loss. (Those most severely hit are preoccupied with their own grief; on the other hand it is reported that bereaved individuals "forgot their grief" in working to help others.)

11. Sympathy toward the victims is related to our knowledge of their losses.

12. Sympathy toward victims is related to our explanation of their losses. (If the suffering is the victim's own fault, as in the case of the "wilfully unemployed" or "wilfully negligent," sympathy is reduced.)

13. Demand for aid to the self is related to subjective loss.

14. Demand for aid to the self is diminished by sympathy for other victims. (The seriously wounded wait their turn or ask to be passed over while the still more seriously wounded are treated.)

15. Demand for aid to the self is related to explanation of our loss. (If we blame ourselves we are less likely to ask for help.)

16. Motivation to help victims generally is related to our sympathy for the victims.

17. Motivation to help victims is related to ideologies concerning the remedies for given types of losses. (A belief that unemployment relief would "demoralize" the victims, prevent the economy from recovering from depression, or threaten "our way of life," was apparently influential in inhibiting such aid in many countries during the depression. A belief that spontaneous individual help is better than bureaucratically organized help may channel our participation to one agency rather than another.)

These relationships are not all direct and linear. Some of them are ambiguous and may reverse at the extremes. What is more serious, some of the relationships work counter to others in the system; without knowledge of their relative weight, we cannot easily predict the outcome. How severe an objective loss can be compensated by knowledge that others have lost still more heavily? Does proximity to impact

increase awareness of others' losses more than it increases our own objective losses, so as to produce more motivation to help—or the opposite? We know that these processes work for some people to some extent. To predict the mass outcome of a certain type of disaster, however, we need to know more about the relative strength of the counterbalancing forces.

The relationships considered in this list are all individualistic—how a person responds to his own loss, and to his perceptions and knowledge of others' losses, as conditioned by his location, his identification, his ideologies. There is nothing said in this model about interpersonal and organizational processes which may spread knowledge, or which may create ideologies, which may create definitions of the situation, and most particularly norms for behavior. We have been assuming that what counted was a "spontaneous outpouring" of individual sentiments. While it is true that the society is not well prepared for disaster situations, that the roles and norms governing behavior are poorly defined, such norms as "human lives must be saved wherever possible" and "you can't let people starve" nonetheless may have strong salience for some people. And as the first moments of impact pass, interaction and interstimulation begin to work. Collective processes, however loosely structured, begin to define for some people at least the norms of "expected behavior," and to create rewards and penalties for conformity and nonconformity to these norms. These community system processes have scarcely been described let alone carefully analyzed in the research. We will consider them later when we discuss the community as a system.

CHAPTER 3

ORGANIZATIONAL AND MASS BEHAVIOR IN THE
EMERGENCY SOCIAL SYSTEM

The Problem of Social Organization in
Sudden Community Disaster

When the disaster is sudden and on a large scale relative to the
capacity of the normal system to cope with it, an emergency social
system has to be created to quickly provide a large volume of disaster
services. Existing organizations, primary groups, and masses of
individuals must be mobilized to provide such services as rescue,
transportation of the injured, medical care, food and shelter, reas-
surance and psychological support, and restoration of damaged essen-
tial facilities. At the same time non-postponable maintenance activ-
ities must be continued—including taking care of children and feeding
families, as well as keeping up public order and public utilities out-
put. This improvised system must perform these services under
conditions of damaged facilities and partly incapacitated personnel.

The emergency social system, like any other, has the problem
of organizing human behavior to produce needed outputs. The problem
of social organization has several levels. Individual behavior is
normally regulated in part by social roles, which guide the behavior
of individuals and make it predictable to others, and in part by per-
sonal emotions and preferences, which may be predictable in the
aggregate but vary from individual to individual. The roles are
organized into subsystems—informal groups like the family or friend-
ship group, or formal organizations, like a work team, business firm,
or government agency. These subsystems in turn may be parts of
larger formal organizations, or formally independent. Individualized
behavior not regulated by social roles, and the behavior of small
groups and organizations which are not part of larger formal organ-
izations or informal arrangements, constitute "mass behavior" from
the viewpoint of the system—that is, it is not predictable in detail,
but it must be predicted or manipulated in the aggregate for the system
to operate. The social system thus operates by organizing some
behavior into roles, organizing roles into subsystems, organizing
some subsystems into large organizations, and manipulating aggre-
gates of individual and subsystem behaviors.

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Thus a market economic system consists in part of formal organizations, with well-defined and well-organized roles for their members, and in part of unorganized masses of consumers who may be either individuals, families, or organizations. The organizations and the masses act on one another through the mechanisms of the market and of mass persuasion. Democratic political systems consist of organized parties and interest groups competing for control over the governmental organization and of masses of individuals and primary groups. These organizations act upon the masses through propaganda, leadership, granting of favors, and so on; the masses act upon the organizations through elections and other manifestations of public opinion, and upon themselves through opinion leadership, rumor chains, and other interpersonal processes.

Behavior in the emergency social system likewise consists of individualized behavior determined by personal emotions and preferences, role behavior in small independent groups such as families, and role behavior in formal organizations. The organization of behavior in the system may break down at the individual level, because members have inadequate role definitions, training, or motivation; at the small-group or organizational level, because roles are not adequately coordinated for disaster conditions; or at the community level, because organizations are not adequately coordinated with one another and because mass behavior is not adequately channeled.

The nature of the emergency social system and the parts played in it by individualized behavior, small-group behavior, and formal organization role behavior depend on a number of factors. One is the scope of the impact: if disaster strikes only a small part of the system, formal organizations can be concentrated on it to perform needed services; if it is extensive relative to the capacity of the formal organizations, individualized and small-group role behaviors become very important. Another factor is time—how suddenly the needs arise and the social costs of delay in meeting them, relative to the normal time-lags in formal organization and informal group processes. A third is the degree of preparedness of the formal and informal social organization. Fairly large-scale disasters can be organizationally handled if there is elaborate advance preparation, as for the air raids in Britain and Germany during World War II, or for floods or hurricanes in certain areas. Other situations can be handled largely by mass action of family and friendship group members within their normal roles; this is how the population is fed, children are cared for, and minor illnesses are treated under non-disaster conditions; and in many disasters the victims' need for temporary shelter and food is met the same way. If neither formal organizations nor primary groups have established roles which effectively guide behavior in a disaster,

then behavior has to be individually improvised with all the confusion and lack of coordination which this involves.

One preoccupation of recent disaster research has been the psychology of individual response to disaster; another has been the consequences of mass behavior, such as convergence or withdrawal; and a third has been the behavior of formal organizations in disaster. This chapter is an effort to consider the operation of the community social system as a whole in the emergency period. It is concerned with the distribution of individual responses—how this affects the other parts of the system and is affected by them—with organizational response, the interrelation of organizations, and the relations between organizational and mass behavior.

The framework of analysis used here should be generally applicable to social systems in disaster; however the particular findings presented are limited to the kinds of disasters for which we have a number of careful case studies. While individual and small-group responses immediately after any disaster may be similar as long as the subjects are isolated from the larger social system, the organizational, mass, and community processes discussed here must differ greatly in disasters of different scope, speed, and degree of social preparedness. The most frequently studied type is the sudden disaster to a part of a relatively unprepared community. This paper will be mainly concerned with this type, although comparisons will be made wherever possible to more widespread and severe disasters such as regional floods and the World War II atom bombings.

Output of the Mass Assault

Research has pointed to a number of specific problems which influence the output of disaster services in the emergency social system. These are summarized in the following paragraphs.

Factors Influencing the Adequacy of the Mass Response

    a.   People exposed to severe threats to highly valued objects without adequate role-definitions or equipment for dealing with them, or with conflicting role-obligations, are put under great strain. This could conceivably lead to a high rate of non-adaptive behavior.

    b.   Normal primary-group ties provide quick help for many, but they do not provide for all victims. The entire group

may be incapacitated or essential members may be away; and some victims may be socially isolated. Unless there is a norm requiring help to all community members in distress, or a general emotional response of sympathy for such people, many will go without aid.

c. Certain kinds of impacts cannot be handled by the mass response. They may require special skills and equipment which the general public does not have. Or they may saturate the primary groups with injuries and material losses so that many cannot help even their own members, and few can spare help for outsiders.

Factors Influencing the Adequacy of Response of Formal Organizations

d. The mobilization of people to play family or general community-roles competes with organization mobilizations and may leave the formal organizations short of or entirely without personnel. This is the organizational consequence of the role conflict problem.

e. Organizations may have difficulty making decisions and directing their personnel under unexpected conditions and for unexpected tasks, due to inadequacies of the leadership or of previously worked out programs.

f. Organizations may not define the situation as one which requires them to act. Relieving suffering or helping the general community may not be their business.

Problems of Inter-Organizational Relations

g. The separate formal organizations become highly dependent on one another in disaster, but they may lack experience, plans, and facilities for coordinating their activities under the unexpected conditions and needs of disaster, so that their joint output is far below what it should be.

Problems in the Relations between Organizations and Masses

h. The uncoordinated mass response of individuals and small groups may overload facilities of all kinds, interfering with

one another and with the formal organizations. One form
of this has become known as the "convergence problem."

i. Organizations may need public support in supplies and
    personnel in a situation where there are no established
    expectations and channels, with the result that organizations
    may fail to take advantage of potential help, or the mass
    response may be too much or too little.

j. Organizations must find ways of getting their services to
    masses of people in a situation where there may be no
    established expectations and channels to guide the public
    and the organizations, or where normal expectations cause
    improper mass responses.

Some of the relationships involved in this set of problems can
be summed up in the following chart.
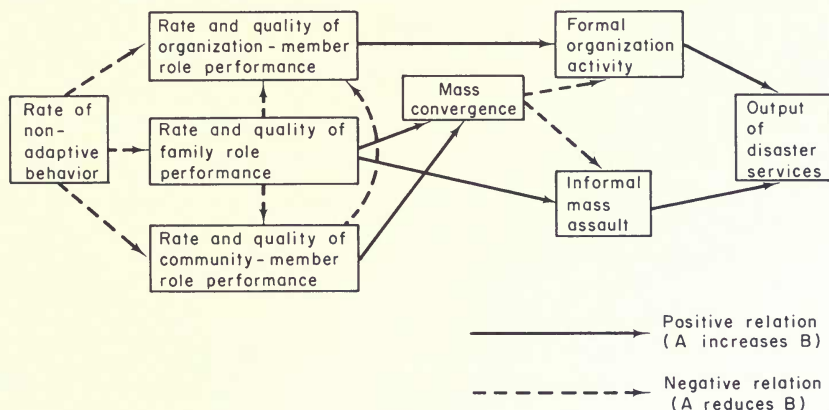
Figure 3-1.   Relationships Influencing Output of the
      Emergency System

This scheme suggests the complex relations between the mass
response and formal organization activities in producing the total
output of disaster services. The mass response has certain unfavor-
able effects on the formal organization response through its compe-
tition for personnel and the obstructive effects of mass convergence.
The net balance of favorable and unfavorable effects cannot be known
unless we have some quantitative estimate of the formal and the
informal contribution to the output, and of the degree to which the
one interferes with the other. The remainder of the chapter will
consider the system relationships outlined and diagrammed above,
and the social mechanisms by which output of the system might be
increased.

Disaster studies have repeatedly shown the importance of the "informal mass assault" in providing disaster services quickly and on a large scale. This mass assault consists of the aggregate of primary-group activities to help their own members and community-oriented behavior of individuals and small groups, although these two components are seldom distinguished.

In the Worcester tornado, a study of medical aspects of the disaster concluded:

> The major work of extrication of injured from the debris and the initial steps to get the injured to medical treatment have been functions carried out chiefly by volunteers who entered the impact zone . . . . The extrication and transportation of the injured has been carried out by intense individual effort which was at first largely disorganized. Later, partial organization characterized by activities of teams of volunteers developed (Raker, et al., 1956, p. 20).

In the Beecher tornado it is reported:

> By the time the emergency headquarters were established approximately three quarters of the dead and injured had been removed by civilian volunteers. Captain Murphy estimated that a thousand civilian volunteers were in the area by the time he arrived (Form & Nosow, 1958, p. 141).

In the Arkansas Tornado studied by the National Opinion Research Center (Marks & Fritz, 1954), most of the rescue, first aid, and immediate relief was done by persons in the impact area or by individuals who went there before outside organizations reached the scene.

A Quantitative Analysis of the Mass
Assault in a Tornado Disaster

The study of the Arkansas Tornado was carried out in such a way that a unique quantitative analysis can be made of the informal mass rescue and relief effort. Probability samples were drawn from a set of four adjoining townships through which the tornado passed, representing both the impact area and the relatively undamaged area. The researchers report the percentage of people in each area who engaged in various forms of disaster activity, including both giving and receiving help (Table 3-1).

TABLE 3-1

Rates of Various Disaster Activities in Impact and
Non-Impact Areas in the Arkansas Tornado

| | Performed service: | | Received service: |
	Impact area residents (per cent)	Non-impact area residents (per cent)	Impact area residents (per cent)
Rescue:			
First half hour	11	- -	2
Next six hours	22	4	2
Second six hours (midnight-dawn)	6	1	- -
At any time	27	5	5
Informal relief (shelter, food, etc.):			
First half hour	35	5	16
Next six hours	46	25	34
Second six hours	14	8	24
At any time	46	42	75 +
Medical aid by individuals:			
First half hour	1	- -	1
Next six hours	4	6	6
Second six hours	- -	3	6
Search for friends, relatives, or victims generally:			
First half hour	32	7	
Next six hours	28	26	
Second six hours	4	5	
At any time	43	29	
Object of search not found in six hours	15	4	
Total sample:	139	158	139
Total population:	app. 1,450	app. 11,000	
Adult population:	app. 850	app. 7,500	

Source: Marks & Fritz, 1954, Tables 4-8, 4-9, 4-10, 4-16.

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These percentages tell us a good deal about the relative rate of involvement in the two areas and the effects of proximity to disaster on participation. The impact area residents have a much higher percentage giving rescue and relief, not only in the first half hour when only a tiny percentage of outsiders were able to help, but in every period of the first twelve hours. Only in giving medical aid by individuals is a higher proportion of the non-impact population active. Additional tables specify these rates for various social categories—men and women, skilled and unskilled, etc.

Here we are not concerned with the determinants of individual behavior, but with the operation of the community as a social system within which needs arise and resources must be found to meet them. Therefore we must look at the total output of services provided by each of the areas, and its relation to the total needs of the victims. To obtain this information the percentages have to be projected into absolute numbers in the total population.

The crucial fact is that the undamaged sectors of the four townships studied had a population about eight times as large as the impact area; relatively few of the rural communities in the area were struck. Therefore one per cent of the non-impact population amounts to as many people as eight per cent of the impact population. The 22 per cent of the impact population engaged in rescue work from 6 p.m. to midnight amounted to 190 people; the four per cent of the non-impact population so engaged provided 300 people. Roughly the same proportion of both populations gave informal relief at some time; the numbers amount to about 400 impact area and 3,000 non-impact area residents. The proportion of the total number of helpers coming from each area is shown in part A of Table 3-2.

This table presents two sets of findings. Part A shows the relative contribution in manpower of the impact area and the much larger non-impact area of the four townships studied. (There are no data on contributions from still farther away, which became considerable in the later periods.) It shows that during the first half hour, rescue and medical aid were performed entirely by the impact area population. Even in this very early period, however, informal relief was being given by more outsiders than impact residents, and almost as many outsiders as impact area residents were searching for people they were concerned about. In the next six hours, the non-impact population contributed more to every category of helpers, from 61 per cent of the rescue workers to 83 per cent of relief givers and 93 per cent of individual givers of medical aid. This is apparently typical of "segmental" disasters where only a small part of a system is affected—here one-eighth of the four-township area.

TABLE 3-2

Relative and Total Output of the Two Areas

	A. Proportion of those perform-ing various services who were:		B. Total numbers*		
	Impact area residents (per cent)	Non-impact area residents (per cent)	Engaged in activity	Receiving activity	Ratio of helpers to helped
Rescue:					
First half hour	100	0	94	35	3
Next six hours	39	61	490	35	14
Second six hours	40	60	125	--	--
At any time	38	62	600	70	8.5
Informal relief:					
First half hour	44	56	680	235	3
Next six hours	17	83	2240	500	4.5
Second six hours	25	75	800	390	2
At any time	11	89	3490	1100+	3
Individual medical aid:					
First half hour	100	0	10	15	.6
Next six hours	7	93	485	70	7
Second six hours	0	100	225	70	3
Search for possible victims:					
First half hour	34	66	790		
Next six hours	11	89	2190		
Second six hours	9	91	410		
At any time	14	86	2565		

*"Total numbers" are projected from samples of 139 and 158 cases, and are subject to considerable sampling error; they are useful, however, in showing rough orders of magnitude.

We can also compare the absolute numbers of people performing disaster services to the numbers receiving such services. The smaller figures in part B cannot be taken too seriously. Chance variations could make a great difference in these numbers in samples of this size. But the figures do suggest that in the first half hour there were scarcely more people engaged in rescue work than there were victims requiring rescue (of whom there were roughly 70). This was a period of severe shortage of helpers relative to need. The next six hours added another 100 rescuers from the impact area, and 300 more from the outside; the rescue workers outnumbered those in need of rescue by about 15 to 1, and the area was probably saturated or oversaturated with rescue workers.

In the first half hour those giving relief were far fewer than the number in need of it, judged by the total number who ultimately received relief. By the next six hours, however, the number of relief-givers had grown to exceed the total population of the impact area, largely through addition of 1,800 non-impact residents giving relief, and the output in terms of people receiving relief more than doubled.

The poverty of the impact area in people capable of giving medical aid is suggested by the figures. Other data indicate that about 115 people (eight per cent of the impact area population) had serious wounds or fractures, and another 485 (34 per cent) had other injuries. During the first six hours only 85 received any sort of medical aid from individuals, and this was mainly from individuals from the non-impact area. Those seriously injured eventually received treatment from the formally organized medical centers in a large town in the non-impact area.

A final point can be derived from the total numbers projected in the table: after the first half hour, a very large number of people were engaged in rescuing, relieving, and searching for victims. While some of these activities were carried on in adjacent areas (especially relief given to victims coming out of the impact area), it appears that several thousand people converged on a limited area normally inhabited by about 1,400.

These figures are presented in detail because they illustrate the problems of total needs and supplies in the system: inside versus outside aid, total helpers versus total receiving or needing aid, and total people converging on the area relative to its normal population. They show the rapid mobilization and large output of the mass assault in this segmental type of disaster; they also suggest the problems created by mass convergence, and the ineffectuality of the mass assault in

performing certain specialized services such as medical care. It would be most useful to have similar data on the inputs and outputs of community systems in other disasters. This would require surveys using probability sampling.

The Rate of Nonadaptive Behavior

The Arkansas tornado study (Marks & Fritz, 1954) and most other systematic investigations of disaster indicate a rather low rate of nonadaptive behavior—panic, shock, hysteria, or other forms of personal disorganization. Given the strangeness of the situation and the severe threat to life, to loved ones, and to personal possessions, this is a surprising observation. It suggests that there must be social and psychological mechanisms which enable the population to cope with unexpected and frightening events.

In the previous chapter we discussed some of the individual factors which influenced response to the Arkansas Tornado. One was the possession of disaster-related skills which were acquired in other social roles and could be "borrowed" for disaster purposes. About one-third of the adult population—almost half the men, but only one-sixth of the women—possessed such skills from previous or current military experience, professional training, public utilities or construction work, or membership in government or in disaster agencies. Categories of people in whom these skills were frequent performed a large amount of useful work and had a low rate of non-adaptive behavior. Categories in which these skills were relatively rare—notably women—tended not to engage in active rescue or relief activities.

It has also been suggested that having strongly-motivated role responsibilities tends to reduce non-adaptive behavior. The tornado study suggests that this is only true when sufficient skills are present to permit people to function in these roles. The women with dependent children, among whom disaster skills were rare, had the highest rate of non-adaptive behavior immediately after impact. However, even in this group the rate fell quite low after the first half hour.

There are no doubt many other variables which influence the ability to perform well and indeed to improvise new behavior patterns under stress. This review has been limited largely to the field studies of disaster to communities. There is a good deal of research on the behavior of members of specialized organizations, notably the military, under stress; and there is also a large amount of laboratory research which employs simulations of real-life stress. To relate these to the community disaster situation requires a very careful analysis of the stimuli and the social setting of actions.

The group setting of victims at the time of impact might be thought to contribute something, either favorable or unfavorable, to the adaptiveness of behavior. In the Arkansas Tornado most of the impact population was at home within the family setting; very few were engaged in organizational activities with fellow workers, supervisors, and other bureaucratic role-partners. Those not with the family were often alone. There is some evidence that those who were separated from their family at the time of impact were more likely to be "shocked, stunned, or dazed" than those with their family (Marks & Fritz, 1954, Table 7-13). Those who so reacted were almost exclusively women. On the other hand, there was no difference in non-adaptive behavior between those who were alone, with from one to four others, and with from five or more others. The amount of "highly agitated" feelings was actually greater among those with the larger groups (Marks & Fritz, 1954, Table 7-7). The main behavioral difference—aside from the obvious point that those who were alone did not engage in protecting others—is that praying was much more frequent in the larger groups.

An example of how the presence of certain skilled people within a group setting might help the whole group is found in the data on forewarning. When the respondents are broken down by communities, one has a much higher rate of warning than the others.

TABLE 3-3

Forewarning in Four Arkansas Communities

	Per Cent	N
Boldingville	82	(17)
Judsonia	67	(86)
Judsonia rural	53	(17)
Doniphan	41	(17)

The analysts comment:

These areal differences are mainly due to several chance factors. One was the presence in Boldingville of several individuals who were highly sensitized to storm cues. They tended to interpret correctly such cues as they perceived. Furthermore, they tended to alert others to the danger.

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This interpretation is supported by figures showing the proportion of people in each community who engaged in interaction with others just before the impact—that is, who were talking with others (Marks & Fritz, 1954, Table 3-8).

TABLE 3-4

Interaction Before Impact

	Per Cent
Boldingville	70
Judsonia	59
Judsonia rural	65
Doniphan	30

More direct evidence of the influence of role models and informal leaders would require a study of people in their interpersonal setting, rather than plucked out of it by random sampling. The NORC analysts note:

In one genuine sense, individuals involved in a set of interactions can only be studied if the perceptions and activities of all individuals involved in a set of inter-actions are obtained. One must be able to see not only how one person acted and spoke, but one must also have knowledge of how such action and speech was interpreted by the other party to the particular interaction under con-sideration. In our field studies, data were frequently obtained from several persons who were together in a particular situation. In this study, the restriction of interviewing only one adult per household, precluded (except by accident) the obtaining of an interview with two or more persons who were together at the time of the disaster. The restriction was adopted to insure getting a wide range of respondents, and with the real-ization that it would prevent the obtaining of certain data. To obtain a more balanced picture of what occurs in certain areas of behavior in disaster, it would be desirable that social interaction be studied from the viewpoint of all interactants in a situation (Marks & Fritz, 1954, p. 80).

For an entire community, we would expect the rate of helpful versus non-adaptive behavior to be influenced by the frequency skills in the population relevant to the type of disaster. The skilled people will have the maximum effect, however, only if they are able to apply their skills directly, by example, by communication, or by leadership to the people who need help and guidance. Therefore the distribution of skilled people is important, how evenly they are spread among face-to-face groups and neighborhoods at the time of the disaster, or how quickly they can get to the places needed.

There must also be actual contact between the skilled and the others. This is usually automatic in disasters which bring people out of their houses and work places into public places where they can observe and hear one another. In some disasters however, such as floods, small groups may be isolated and skilled personnel unable to reach them.

Furthermore, there must be social labelling of the skilled person so that he can be imitated or obeyed, possibly amid competition from less competent models and leaders. Sometimes his behavior is visibly effective—he knows how to lever up heavy wreckage, turn off gas valves, or stop bleeding. In other cases it is not self-validating and requires social validation, perhaps through occupational symbols: "I'm a doctor, let me through"; "He's a telephone company man"; "We're the police." The man with a uniform, a telephone company coverall, a tin hat, or the appropriate equipment—a medical bag, a chain saw, a crowbar—has a visible symbol of competence.

Labels, of course, do not always tell the truth. The girl in the "nurse's uniform" may turn out to be a car-hop, and the man with the crowbar a disastrous incompetent at rescue work, just as a doctor may be a quack, an expert on anti-Communism a fraud, or a professor an ignoramus. Part of the security of people in modern societies comes from the development of unambiguous guarantees of occupational competence, so that bridges do not collapse as often as in the 19th century; teachers generally know more than their pupils, doctors with no training are rare, and policemen can more frequently be relied on for protection of the rights of citizens. The establishment of valid symbols of role competence did not come easily. It required that training institutions be drastically and expensively improved, that they be given the capacity to turn out enough trained personnel to meet social needs without resort to substitutes, that effective systems of policing be created, often over bitter opposition of vested interests, and that society be willing to pay the price of all this.

In the first minutes or hours after a sudden disaster, many vital services will have to be rendered the victims by people who happen to be in the immediate vicinity, regardless of their formal skills. As soon as possible, of course, the community leadership sends into the disaster area a staff of trained and visible specialists — policemen, firemen, civil defense workers, Red Cross nurses, ambulance teams, etc. This requires mobilizing and transporting specialists under difficult conditions, and it cannot always be done in time to meet the most urgent needs. The Worcester tornado probably came close to the maximum possible use of this mechanism. The impact area was limited, and it was long and narrow so that it could be quickly penetrated from outside; immediately around it was a large city rich in specialized institutions and leadership. No area was cut off for more than half an hour. Even so, most of the rescue work appears to have been done by non-specialists.

The use of mass communications media to give direct instructions as to appropriate behavior in the situation itself is another possible device to compensate for lack of widely diffused disaster skills. This requires that the transmitters and receivers be functioning and accessible to those who possess and who need information respectively. It is also limited to general instructions, compared with the highly specific behaviors which can be communicated by models or leaders on the spot. This technique has been effectively used in recent flood and hurricane evacuations, where time was available before impact interfered with communications.

The most obvious solution, but also the most difficult, would be to eliminate the lack of skills and poor definition of social relationships by mass preparation: assigning everyone a role in the emergency social system and training him for it in advance. This is the Utopia of the civil defense planner. But in a peacetime society where most social influences aim to encourage private consumption and pursuit of personal interest, a major disaster program would be like a skeleton at the feast.

Janis has reported some of the violent and irrational responses produced when interviews overcame citizens' disbelief in the atomic danger by quoting expert opinion.

When comfortable beliefs about the future were temporarily shaken by the interviewer's counter-arguments, the initial unconcern was often abandoned. Without any apparent fore-thought or considered judgment, some of the respondents seemingly were ready to support gross changes in American

political policies, such as preventive war, extreme
isolation, and drastic curbs against foreigners and
Communists (1951, p. 240).

Janis draws the conclusion:

To the extent that current opinions concerning civil
defense arise from misconceptions about the destruc-
tive impact of the A-bomb, it should be possible to
bring about favorable changes merely by publicizing
the facts about Hiroshima and Nagasaki (pp. 241-242).

Whether this was ever a plausible remedy may be doubted; given
the H-bomb it obviously does not apply. Considering the inability of
any disaster preparation program to give residents of urban areas any
significant guarantee of security to self and loved ones in case of
massive nuclear attack, the response to a mass training program
oriented to that danger might be quite different from what was intended.
It is not obvious to everyone that a major investment of personal energy
in civil defense training is the most rational response to the danger.
Some might prefer to increase their efforts devoted to prevention of
war.

On the other hand some minimal personal and community
preparation, oriented toward peacetime accidents and natural disasters
might appear rational and non-threatening, especially in areas where
accidental explosions, earthquakes, tornadoes, hurricanes or floods
have been known to occur—and that includes most places.

We have emphasized here the problem of obtaining competent
rescue and relief behavior, rather than the avoidance of the more
extreme forms of non-adaptive behavior. Even among the one group
which showed a relatively high incidence of shocked, dazed, and con-
fused behavior immediately after impact in the Arkansas tornado—
the mothers of dependent children—such behavior fell to a very low
rate after the first half hour and did not constitute a practical problem.

The problem of mass panic and shock is discussed at length in
the disaster literature. Janis (1951) examines the data from World
War II air raids, and Quarantelli (1954) and others (Janis, Chapman,
Gillin, & Spiegel, 1955) the evidence of many natural disasters. All
these authors come to the conclusion that the rate of extreme non-
adaptive behavior in disaster is generally very low, even in impacts
as intense as the Hiroshima atom-bombing. Primary group roles
appear to provide people with strong motivation to act rationally;
borrowed skills help many people to actually accomplish their goals,

even if not very efficiently. Response to long-continued strains, such as unemployment, poverty, extreme social competition or prolonged racial oppression is another story; but this type of strain is a problem for the long-run restorative system rather than the emergency period.

The Rate of Community-Oriented Behavior

Besides the problem of non-adaptive behavior, and of the competence to engage in helpful behavior, there is the problem of motivating the mass performance of disaster services. As indicated in the previous chapter, help to primary group members is usually very strongly motivated, but the motivation to help neighbors with whom one is only casually acquainted or complete strangers living in the community is problematic. Yet in sudden natural disasters this does not seem to be a problem; there is a mass outpouring of spontaneous help to the victims. Some of the psychological bases of this were discussed in Chapter 2. The social mechanisms by which such behavior becomes a community norm will be examined in detail in the next chapter, as they apply both to the emergency and the post-emergency social system.

Impact Variables Limiting the Mass Assault

By way of contrast with the ratios of helpers to victims found in the tornado disasters, it is worthwhile to examine two other cases in which quantitative data are available. A survey of evacuees from flooded communities in Holland reported that 29 per cent rescued themselves, 31 per cent were rescued by "fellow villagers or islanders," 6 per cent by fishermen, and 12 per cent by soldier, police, or firemen; the other 23 per cent were unknown or "other" (Lammers, 1955, p. 190). This appears similar to the tornado disasters, in spite of the much wider and prolonged impact. The Dutch analysts point out, however, that the picture would be drastically different if one concentrated on the most severely and suddenly flooded areas. Qualitative studies of three badly flooded communities report the complete inability of groups isolated on housetops and dykes to help themselves or others, and the inability of the rest of the community or nearby areas to aid them for a long period. In the deep and rough waters of the first day of flooding, boats were essential, and there were hardly any within the communities studied. A survey of villagers in one of these communities showed only 4 per cent were rescued by fellow villagers and the same percentage rescued others. Of the total sample of evacuees, only 12 per cent were rescued during the first six hours,

and 38 per cent spent more than twenty-four hours under the flood danger (Ellemers & in't Veld-Langeveld, 1955, p. 23).

In Hiroshima the A-bomb left 30 per cent of the population dead or dying, and another 30 per cent seriously injured. Janis (1951) discusses the question of how much mutual help there was among victims in the first hours after the disaster. Some witnesses and some analysts suggest that the survivors behaved in an irrational and unhelpful manner:

> The people seemed stunned by the catastrophe and rushed around as jungle animals suddenly released from a cage. Some few apparently attempted to help others from the wreckage, particularly members of their family or friends. Others assisted those who were unable to walk alone. However, many injured were left trapped beneath collapsed buildings as people fled by them in the streets. Pandemonium reigned as the uninjured and slightly injured fled the city in fearful panic (U. S. Strategic Bombing Survey, quoted in Janis, 1951, p. 29).

Janis believes that these generalizations are incorrect and finds no evidence of mass panic in any primary source. On the contrary he finds many descriptions of efforts to help other victims, no complaints by respondents of not receiving aid when in need of it, and no one who admitted failing to give aid when it was possible to do so.

Quantitative data are unfortunately very sparse. Analysis of about 50 interviews with Hiroshima residents made by the bombing survey produced the following findings:

> Seventeen per cent mentioned having received aid from strangers and 4 per cent mentioned aid from family members or close friends. Furthermore, 17 per cent mentioned giving help to strangers and 11 per cent to members of their own families or close friends. In general, a fairly sizeable proportion of the Hiroshima interviewees (over one-third) referred to rational, practical actions carried out in order to assist other people, whereas no one spoke of any form of neglect (Janis, 1951, p. 39).

This figure is less than the roughly 50 per cent of the Arkansas Tornado impact area population who did rescue work or gave relief. If we compare the proportion giving aid with the proportion who needed such aid—the severely injured, including some who died for want of

aid, and the dying whose sufferings might have been eased—the discrepancy is obvious. In the tornado, rescuers outnumbered the rescued by almost ten to one, and those who gave relief in the first few hours outnumbered those receiving it three or four times. In Hiroshima the proportion of impact area residents giving any form of aid is about equal to the number who were severely injured but ultimately survived—to say nothing of the equal number dead, or dying, or trapped. Furthermore, in Hiroshima, as in the Arkansas disaster, the general population was able to do little for the medical needs of victims. But in Hiroshima, unlike the Arkansas area, most of the doctors and nurses were killed or severely wounded and most of the hospitals destroyed, so that victims went without medical aid for long periods.

If we shift the analysis of the Hiroshima data from the question of mass panic to the problem of the relation of supply of help to demand, it appears that the mass assault, while still important as a source of rescue and relief, was grossly inadequate in relation to the need. The fact that "no one spoke of any form of neglect" seems to be weak evidence compared with the descriptions of many trapped without aid, dying without medical care, begging water from passers-by, and dragging their injured bodies out of the city.

The Dutch flood illustrates a disaster requiring special equip-ment and skills which could not be provided by the local population. The Hiroshima A-bombing illustrates an impact which produced so many victims that those capable of helping, even if they all were willing, were outnumbered by those in need. The public's self-help abilities, therefore, should not be taken for granted in every sort of disaster.

Organizational Mobilization in Community Disaster

If the mass assault is one arm of the community's response to disaster, the formal organizations are the other. Organizations can do many things beyond the power of unorganized groups, because they have coordination, special skills, and equipment. The problems of organizations in disaster are to gather their personnel together quickly, to get men and equipment into the disaster areas, and to function as an organization, with internal communication, leadership, and division of labor, under difficult conditions. A prior condition is, of course, that the organization have men, equipment, and skills useful in disaster, and that it define its responsibilities as requiring action to help the community in the type of disaster which has occurred.

We will consider some of these problems of organizations in disaster and their remedies. The analysis of organizational responses to disaster is necessarily qualitative at present. While most case studies of disaster contain some information on the behavior of organizations, it is not standardized and detailed enough for systematic comparisons or statistical analysis. Details of how organizations mobilized, how they were managed, and how they cooperated are not always spelled out, and no "standard background data" are normally collected on organizations as there are on survey respondents.

The closest thing to a standardized description of organizations is found in Form and Nosow's (1958) study of the Flint-Beecher tornado. In that study, for each of seven organizational units, seven areas of performance are reported: (1) speed and completeness of mobilization, (2) degree of internal coordination, (3) relations with other organization, (4) utilization of volunteers, (5) perception of tasks, (6) perception of organization needs, and (7) self-evaluation of performance. In addition, background information is presented on their formal structure, strength of informal organization, social composition, training and commitment of personnel, experience with emergencies, and extent of planning for large-scale disaster. This makes the report much more useful.

If a "standard inventory of organizational background and activity" could be developed for future disaster studies, systematic comparisons and statistical analysis of the behavior of organizations would become possible. Here we will use a more traditional kind of comparative analysis, in which we hunt through the case studies for facts bearing on a number of questions and try to draw conclusions from the resulting very crude correlations of organizational attributes and performance.

The Rate of Role Competition

The choice between formal organization or professional roles, primary-group roles, and informal community-oriented activities in a disaster may involve role conflict. The overload of demand created by the disaster breaks down the normal time-segregation of responsibilities. For individuals this may create psychological conflict and non-adaptive behavior. For organizations and groups, this must lead to a failure to get participation of some or all of their members, with a resulting breakdown in group activities. From the viewpoint of the community system, many organizations are dispensable in preference to family or community-oriented behavior; but certain organizations and professions are essential if disaster services are to be provided and losses minimized.

Killian (1952), in his well-known study of the problem of role conflict in four disasters, gives examples of the failure of organization members to stick to their job, along with a few cases in which they did. Examples of the abandonment of organizational roles are also found in the Flint-Beecher tornado study (Form & Nosow, 1958), the Waco tornado study (Moore, 1958), the Halifax explosion (Prince, 1920), and the NORC disaster studies (Marks & Fritz, 1954). The tendency to abandon organization roles appears to be very general. The mechanism which solves the problem from the individual point of view—clear-cut role priorities which prevent doubt and confusion— generally favors the family role and contributes to the problem for the community system.

"Yet in none of the four communities studied did the disastrous consequences contemplated . . . seem to have materialized," notes Killian (1952, p. 311). What social processes permitted them to avoid the "secondary disaster" threatened by an "atomization of the community into small, uncoordinated groups"? One mechanism was illustrated in the Waco disaster where officials were able to quickly ascertain their family's safety by telephone and get back on the job (although mere telephonic reassurance was not enough for one). When officials quickly learn the scope of the impact, and know that their family is located outside the danger zone, even this form of direct contact might be unnecessary.

Some organizations have an advantage in localized disasters when their personnel are drawn from a wider area, most of which is known to be outside the impact zone. This is true of the state police, the utilities companies, army, and similar multi-community organizations. Prince notes the important role of the army in the Halifax disaster, and Form and Nosow describe the behavior of the fire department from a neighboring, undamaged town as notably effective in the Beecher Tornado. The effective organizational role performance of utility workers, described by Killian and by the NORC study of the Arkansas Tornado, may also reflect the non-local character of organizational recruitment.

Finally it is possible to find some people who are without any family ties, for whom the conflict simply does not exist. There are no specific instances of this noted in the disaster studies, but the example of recruiting men for a dangerous mission from those who are single is familiar to all patrons of old war movies and new space operas. This is, of course, the principle on which the Catholic Church has operated since the institution of a celibate clergy in the Middle Ages.

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The resolution of family versus organizational role conflict favorably for the community in the cases studied derived not from organizational loyalty which overcame family loyalties, but largely from the ecology of the physical impact, the ease of communication between job and home, officials getting knowledge that the impact area did not include their homes, the fortuitous location of families of some people outside the area, and the geographically broad recruitment base of some multi-community organizations. For most organization members, it was apparently possible to ascertain fairly quickly that the family was safe; for others it was possible to perform family disaster roles and then return to the organization in time to do some good. In the case of the fire departments in the Southwestern community and in Beecher, however, the organization was almost completely deactivated, due to the saturation of the membership with family injuries.

An examination of cases in which organizations did manage to function or to recover quickly suggests two kinds of mechanisms which support the heads of the organization. One set operates to give organizational roles the higher priority in case of conflict.

Mechanism for raising the priority of organizational or professional roles

a. Training of essential organization members and professionals to give first priority to the job and not to the family. An example is that of the Texas City oil refinery workers, who stayed on the job long enough to shut down their plants safely, thus sparing the town possible additional disaster (Killian, 1952). Prior to the White (1962) study, it appeared that this behavior was infrequent; White suggests that sticking with the organization is, in fact, the typical response.

b. Visibility of organizational or professional personnel so that clients and community members can exert pressure on them to stay on the job. This clearly operated for the Texas City minister (Killian, 1952), the Flagler mortician (Marks & Fritz, 1954, 3), and the Worcester bus driver (Wolfenstein, 1957, pp. 98-99). A direct, personal appeal from the clients needing services may somewhat offset family concerns. The systematic interviews with organization members by White (1962) also support this possibility.

c. Degree of primary group loyalty among organization members. This also may have operated among the Texas City oil refinery workers (Killian 1952). Shils and Janowitz (1948)

demonstrate the importance of this factor in holding together military units when ideological and nationalistic reasons no longer applied.

Mechanisms for avoiding conflict between family and organizational or professional roles

a. Proportion of organization members recruited from outside the local area. In a limited disaster, such people would not have a conflict. Examples are state policemen and utilities workers.

b. Proportion of organization members without close family ties. This applies especially to the old-fashioned armed forces and of course to the Catholic Church (Prince, 1920).

c. Availability to organization members of information on the scope of the impact. In limited disasters this would eliminate role conflict for the large number of members whose families were actually in safe areas, while alerting those with families in the impact area to this fact so that they might leave for home. On balance there would probably be a considerable net gain, so long as the disaster was not too large (Form & Nosow, 1958, 169-170).

d. Availability of rapid communication between job and home, to reassure members whose families are actually safe. This would permit even some of those whose families were in the danger area to reassure themselves of their families' safety. Examples are some of the officials in the Waco Tornado, who telephoned home from offices having special trunk lines. This is difficult to arrange on a large scale, due to the limited capacity of communications system and the likelihood of damage to them. In some respects it is better for the organization if its members are at home at the time of impact; then they know whether their family is safe, and can proceed accordingly. If essential personnel live close to their work or mobilization point, the trip from job to home and back, or from home to job, takes minimum time away from their organization duties.

Of all the available mechanisms, those which avoid the conflict would appear most promising if they can be arranged. One would expect that family ties are so powerful in present American society that they will override other commitments if people believe their family is threatened. However the White (1962) study suggests that many

organization members do stay on the job if they are confronted with clearly necessary tasks with which they are familiar and if there is no evidence that they are needed by their family.

Leadership Recruitment and Competence

The previous chapter considered the problem of organizational role-competence in disaster in some detail. Here we will try to review the organizational and community characteristics which appear to make for greater competence.

First of all, the recruitment of organization leaders by ascriptive criteria—by social status, wealth, or personal relationships to political leaders—is a recipe for turning threat into disaster. The behavior of some voluntary organizations in U.S. disasters, of the Mexican city government in the Rio Grande Flood, and of the Dutch polder boards and local governments in the 1953 flood, provide examples of incompetent leadership resulting from this recruitment system. By contrast, the performance of public utilities companies, of state police departments, and of the professional city manager in Eagle Pass during the Rio Grande Flood, shows what can be done by organizations where jobs are assigned on the basis of technical competence.

The second lesson is that planning and practice for community-wide emergencies are necessary for adequate performance in such situations. The utilities companies again provide the best example. Their personnel are accustomed to working under stress in small-scale emergencies. Perhaps more important, these organizations have plans, which are periodically activated by large-scale weather damage, for coping with large-scale emergencies. These plans involve rapid shifts of personnel and resources over a large region, and large delegations of authority to the local units to hasten the restoration of service. Hospitals are also very experienced in handling small-scale emergencies—these are their stock in trade. But their normal organization makes no preparation for dealing with community disasters; they have difficulty in coping rationally with mass casualties, because they seldom have experience with them. Even those hospitals which had advance plans for mass casualties had never rehearsed their provisions, and many had not even assigned the planned emergency roles to particular people, as was shown by the Worcester Tornado. Police departments, fire departments, and other agencies well trained in handling small-scale emergencies are also likely to lack plans and training in the special problems of community disaster.

The remedy for the first problem of inappropriate recruitment of personnel is superficially simple: recruit on the basis of competence instead. However, the efforts of good-government reformers to increase the technical competence of local government by making it non-political and professional have met recurring defeats. This suggests that the effort to make local government roles purely technical is a mistake; the essence of government is that it must be responsive to the changing and conflicting interests of groups in the population. It is concerned with goals as well as means and with the public's own conceptions of its needs as well as the technician's conception of good government; it is inherently political. The question is rather how political activity is organized. In America it is organized through machines which motivate their personnel through patronage, favors to individuals and groups, and personal advantage. This does not permit achievement of a high level of technical competence in government administration. European governments, both conservative and socialist, achieve technically competent administration because the party workers and voters are oriented to party programs rather than personalities and favors. This is possible because of the motivating force of class-oriented ideologies and loyalties, especially among the working class. It is doubtful that America will develop anything like these class ideologies at this stage of its history; and such ideologies create their own rigidities in politics. Whether through rising education and public rationality some non-patronage basis of party organization will be achieved in most American communities is an open question. Meanwhile, most local governments operate at a disadvantage in dealing with disasters as with other more chronic social problems.

The problems of increasing technical competence or professionalism within voluntary organizations are also difficult to solve. Such organizations depend on voluntary contributions of money and services, just as the political organizations depend on votes, money, and work. Unlike the political organization, they cannot make a substantial payoff in the favors of office. Since beggars cannot be choosers, they may have to take what they can get. There are of course some voluntary organizations which require a notably high degree of competence. Some volunteer fire departments appear to have standards of performance which social status and wealth cannot replace. The student-operated law review in law schools is a voluntary enterprise of fanatic devotion to technical competence as criterion of admission, as are some of the better student newspapers. So, of course, are most athletic teams. This solution is possible when the organization is highly attractive to people and when there are a set of rational tests to which novices can be put to determine their competence. The leaders of such an organization, once recruited through such a rigorous merit system, have an interest in maintaining it.

The remedy for a lack of planning and rehearsal for community disaster is naturally to make such plans and practice them periodically. The reason this is not done by most of the organizations called upon for disaster services—police, fire department, hospitals, radio stations, highway department, etc—is that community-wide disaster is a rarity, coming perhaps once in a generation or even less often to most communities. Local agencies thus do not acquire much experience with them in the normal course of events. Real preparation for major disaster requires more foresight and willingness to invest with no certainty of return than most local agencies have. Outside pressure or subsidy may be required to produce such preparation. The very competence of local agencies in dealing with the normal, several-times-a-year types of emergency may make them overconfident about their ability to deal with large emergencies, which may require different techniques.

The entire society faces a problem in creating a body of experts and of expert knowledge for dealing with infrequent events like community or regional disaster. War, another infrequent problem, has been handled by maintaining a skeleton force and professional training centers in times of peace, which can be rapidly expanded with non-professional personnel in wartime; this involves a number of difficulties arising both from the professionals and the amateurs. Natural disaster has created certain institutions, covering wide enough areas to obtain some cumulative experience from the widely scattered cases which occur. The Red Cross is such an agency; the public health services, the military forces, and big-city or state police departments are other examples. Some of these agencies have codified their experience in reports and in handbooks. The efforts of government agencies concerned with civil defense to foster scientific social research on disaster represent a further step in the creation of social institutions capable of learning from disaster and disseminating the knowledge acquired.

If a body of reliable expert knowledge can be made available, if local community organizations have personnel chosen for technical competence, if local plans are made for large-scale emergencies, if roles in these plans are actually assigned to people and rehearsed, then we can expect organizational performance in community disaster to be much improved and much loss avoided. Whether such plans can be made for still larger, society-wide disaster is a much more difficult question to answer.

Definition of Organizational Goals in Community Disaster

There are some cases in which organizations, warned in advance of impending disaster to the community, have stood aside and done

relatively little to help, at least in the early stages before mass suffering has arisen. A clear instance is the behavior of the Army post in the Mexican city threatened by flooding. Word was received two days before the flood crest arrived. The post commander and his men made their own preparations, but aside from one visit to pass the warning on to the mayor, there were no attempts to coordinate warnings and early protective actions with other organizations of the community. Only after the flood had arrived did the army go into action to help the community; from this point on, fortunately, they provided a major source of rescue and evacuation assistance (Clifford, 1956, p. 43).

The police of this city, who were also responsible to an external heirarchy rather than the local government, showed even less concern with the community. The chief received warning from the American city across the river, but in the words of one official:

"We didn't try to talk it over with anyone; we continued routine protection of the city" (Clifford, 1956, p. 41).

The off-duty half of the force was not called up. When the flood arrived, the only concern of the police force was to evacuate the prisoners from the jail and prevent them from escaping. The rest of the force "evidenced almost complete disintegration during the disaster" (p. 41).

This behavior of the army and police contrasts sharply with the community-service orientation shown by United States armed forces and state police units when nearby communities suffer disaster, as reported in many studies (Crane, 1960; Form & Nosow, 1958; Killian & Rayner, 1953; Moore, 1958; Rosow, 1955).

In the United States disasters which have been studied, it is difficult to find a case of an available organization which did not try to play a part in the disaster effort; the problem is, indeed, that of competition to get into the act. Commercial organizations whose formal, legal goal is to make profit for their owners, are regularly diverted to provide needed disaster services when human lives are in danger. In Waco (Moore, 1958, p. 14) merchants made available their stocks of tools and work clothing to rescuers. A commercial laundry dried the rescue workers' clothing and gloves. In Flint (Rosow, 1955, pp. 338-342) industrial and contracting companies sent crews with heavy equipment to help with rescue and road clearance; one contractor took charge of mobilizing and dispatching equipment from those firms possessing it. In the Arkansas Tornado (Marks & Fritz, 1954, p. 298) a contractor in a town 30 miles away brought in bulldozers and an electric generator within a few hours after impact;

the next day government bodies and private firms for miles around
sent in equipment, which was put in charge of one private contractor
in town in order to coordinate street clearance. The strength of
community identification and humanitarian motives is evident among
leaders of every type of organization in this obvious natural kind of
disaster. Almost the only reported examples of uncooperative behavior
during the emergency phase are the refusals of some hospitals in
southern cities to admit Negro disaster victims. In other cases,
segregation has been modified or temporarily abandoned to permit
Negro victims to receive emergency care. The stronger the caste
divisions in society, the less able it is to cope with unexpected situ-
ations which require a pooling of resources.

To answer the question of which organizations mobilize for action
and which do not would require a more careful survey of organizations
in the community and region of the disaster than has yet been carried
out.

> In the case of the Flint-Beecher tornado, literally
> hundreds of organizations participated or claimed to
> have participated in the rescue and rehabilitation
> activities—to mention a few—lodges, churches, labor
> unions, Boy Scouts, businesses, volunteer police,
> hospitals, professional societies, Red Feather
> (Community Chest), and Civil Air Patrol. Many of
> them participated or claimed to have participated in
> all stages of the disaster—in warning, rescue, and
> rehabilitation (Form & Nosow, 1958, pp. 127-128).

It would be interesting to know which organizations regarded
each phase of the disaster as their business and attempted to help as
organizations, which suspended operations to permit members to
function elsewhere, and which tried to continue normal operations
regardless of the disaster.

Coordination Within and Between Organizations

It is one thing for an organization to gather its members and
send them into the disaster area; it is another to keep in touch with
them, find out what problems they are encountering, and send them
what is needed. The difficulty of coordinating activities under the
time-pressure and disruption of normal channels which characterize
the emergency social system has been reported by many researchers.
Some organizations serve simply as a source of manpower—training,
mobilizing, and sending into the field competent individuals or small

teams which thereafter function on their own; others try to act as an organization in the disaster area. The job of controlling the activities of personnel sent into the disaster area from many sources may be taken over by some single agency or improvised center, so that the various components become integrated in a "super-organization."

The problem of coordination has been studied comparatively in four tornado-struck communities by Rosow (1955) and for six organizations in one community by Form and Nosow (1958). Williams (1956) and Thompson & Hawkes (1962) have summarized a large number of studies.

Patterns of Communication

Williams (1956, p. 51) presents a simple "servo model" of the process of organizational control.

POWER SOURCE | POWER TRANSFORMER | LOAD

| Logistical resources: manpower, supplies power, equipment | Rescue and relief groups and organizations | OUTPUT Work | Needs and conditions in the field |

ERROR MESSAGE
Directions for new and changed outputs, tasks to be done, needs to be met

FEEDBACK
Messages about actual needs and conditions in the field

COMPARER

Command function; central communication and control centers

INITIAL INPUT
Warning, notification

REFERENCE INPUT
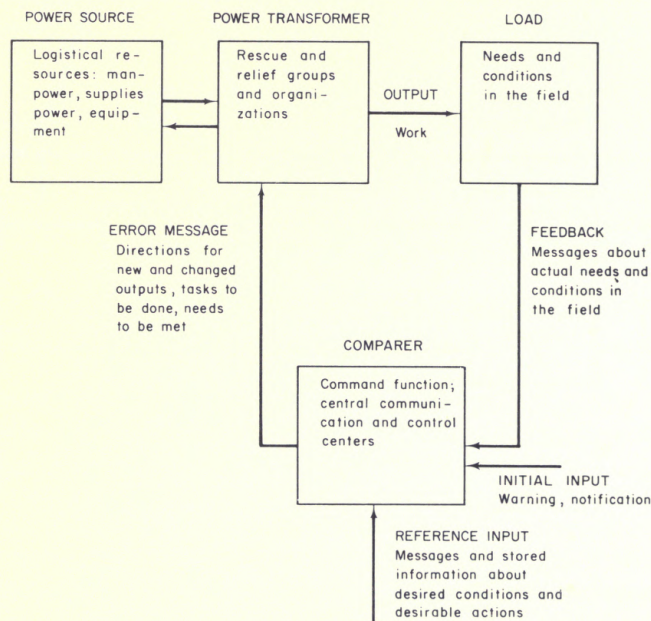Messages and stored information about desired conditions and desirable actions

Figure 3-2.   A Servo Model of Organizational Control

From this model it is not clear why the central command is needed—why can the rescue and relief groups not see the effect of their own output on the needs and conditions in the field and take the resources they require? After all, they are human beings, not

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electric motors requiring outside guidance. A more complex model is required to illustrate the problem of coordinating diverse work groups in the field and allocate resources from outside the disaster area to them.

A good example of the problem of field communication is found in Rosow's (1955, pp. 324-329) analysis of the Flint-Beecher tornado data. At an early stage, the Michigan state police got a report that the center of the impact was at a drive-in theater, which was in fact only on the periphery of the damaged area. Shortly thereafter a fire truck from a nearby town actually worked its way down the road past the drive-in and found that there had not been a severe impact there. But what the firemen knew was not communicated to the state police. Assuming heavy casualties at the drive-in, and that the direct road there was blocked, the state police sent badly needed ambulances there on a two-hour drive over a roundabout route. Furthermore, when the state police found out the true situation, the Red Cross was not informed, and they sent a field radio station to the drive-in area. All three organizations had radio nets, but they had no shared communications center which could put all the information together (Figure 3-3).

Figure 3-3. Flint-Beecher: Communications about the Drive-In Incident

A contrasting case is reported by Rosow (1955, pp. 173-178) in the Massachusetts town of Shelby. Here the local police made an immediate survey of the area of destruction, making running reports to headquarters over the police radio; conditions in each area were noted on a master record in police headquarters and manpower and equipment were shifted according to needs revealed by this master chart. The police chief was even able to go out into the field, with his field radio equipment, and continue coordinating the operation as he moved from point to point (Figure 3-4).
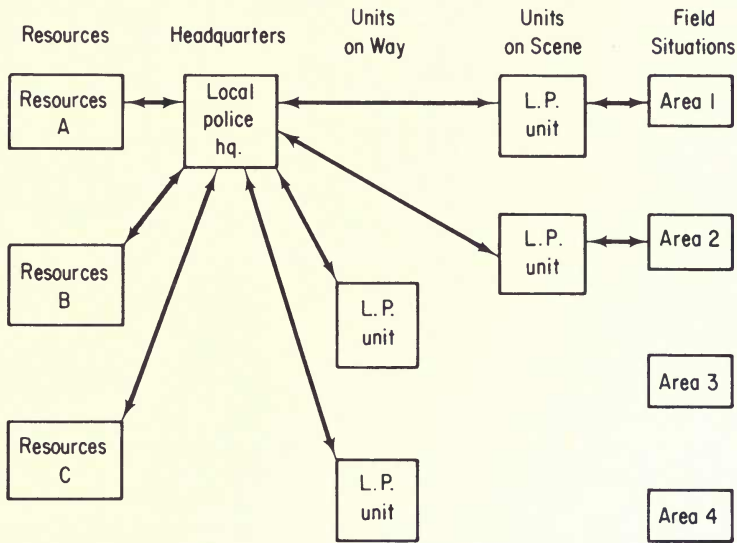
Figure 3-4. Shelby: Centralized Communications
Net of Local Police

In the nearby town of Harwood the state police were making use of an open radio net between cars in the field and headquarters (Rosow, 1955, pp. 205-208, 211-222). As their cars moved into the disaster area they monitored the reports of the cars already there and directed themselves accordingly. Headquarters meanwhile mobilized equipment according to these same reports and dispatched it where it appeared most needed. This sharing of information made it possible for each unit to act rationally with a minimum of outside direction (Figure 3-5).

The centralized communications net (Figure 3-4) permits all information received from field units to be compared and recorded in the organizational "memory," so that instructions can be given to each field unit on the basis of what all other field units have found out. A centralized comparison of the reported needs of each area can be made, so that resources are allocated relatively rationally.
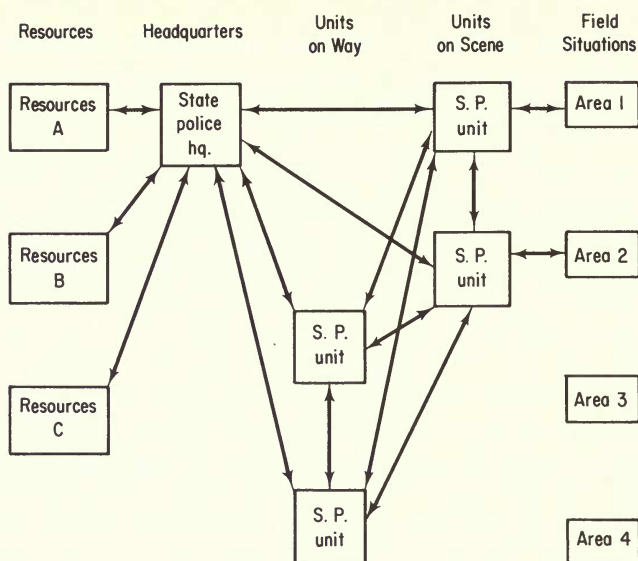
Figure 3-5. Harwood: Open Communications Net
of State Police

The open communications net (Figure 3-5) permits all this and
more: each field unit is automatically possessor of the collective
knowledge of the whole, and can adjust its actions accordingly without
further messages from headquarters. However, such a system is
limited in its total message capacity to what one channel can pass.
If the number of field units was large, too many people would be trying
to talk at once. But within the limits of its capacity it has great
advantages.

A seriously defective type of communications net arises if the
field unit broadcasts its requests for help to many individuals and
organizations which control resources, without any central coordination
of the response. The result may not only be waste of resources, but
a harmful glut of supplies, personnel, and equipment in some areas.
Examples are found in Moore's study of the Waco tornado, and in the
Holland flood disaster. Moore notes:

> Civilian rescue 'teams' were at first merely unorganized
> groups. Any member who lacked some article called out
> his need, and the request was picked up and amplified by
> loud-speaker trucks. From here it often went out over
> radio, connected to a state-wide hookup. As a result,
> roads were choked with assorted public and private con-
> veyances bringing assistance, some needed and some not.
> An officer in command of some 18,000 soldiers was told,
> when he asked what aid he could supply, to "send everything

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you've got." Fortunately, he did not take this demand literally and later discovered that no more than 200 of his men could actually be used to advantage (Moore, 1958), p. 13).

Van Dijk and Pilger report this incident from the Dutch flood:

> Via the military sender, (the village of) Haamstede asked for cattle fodder and a surgeon. The result of repeated broadcasts, which went over the whole of Holland, was seen next day. Six surgeons and ten tons of cattle food arrived. In the rest of the area, Haamstede was reproached for this. "Mr. Q (the burgomaster) lost his head," they said: "Mr. Q asked for more cattle cakes than he needed" (1955, p. 57).

In its simple form this type of communications net involves the one-way communication of needs from a single field unit to many unlinked sources of supply—an indiscriminate broadcast (Figure 3-6).
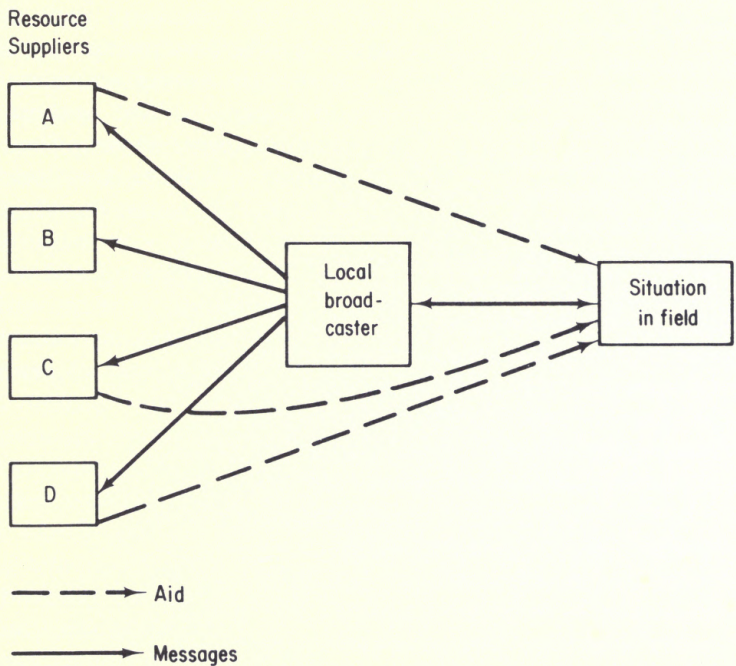
Resource
Suppliers

Figure 3-6. Results of Indiscriminate Broadcasting from Impact Area

But note that, in both the examples given, the situation was still more confused. There was two-stage broadcast repetition—in

Waco first by the loudspeaker on the scene and then by radio over the state, in Holland from the local broadcast to repetition by other stations over the country. A center is needed to coordinate messages from the field areas to the sources of supply and to assign particular resource units rationally among areas needing them.

The bad examples so far have been poorly coordinated communications systems; all of the units involved had the capacity to communicate, being equipped with two-way radio. Needless to say, this is not a universal condition for organizations and work groups. For most organizations, the loss of telephone service is literally disorganizing, although over limited areas foot or car messenger service may be used, as by the Salvation Army at Beecher (Form & Nosow, 1958, p. 178). This makes it especially important that organizations and individuals with radio communications facilities cooperate with other organizations which can provide disaster services. Such cooperation is not easily developed in the disaster situation, where each organization tends to give priority to its own communications. Prior planning, either of specific cooperative relationships or for a general local communications center, would be of great value.

The ability of modern societies to create an emergency social system of such scope, encompassing such wide areas and vast resources, is uniquely dependent on long-range instant communications. Without them the wave of information would spread slowly from the disaster scene; the emergency social system would be limited to resources available in the impact area itself. In underdeveloped areas it may be days and weeks before news of the fate of a remote village comes to the capital. Sudden disaster, with its urgent needs for rescue and medical care, requires a broadly based system which can respond in minutes to save lives; rapid communications make this possible, so long as disaster strikes a relatively small segment of the society.

The Growth of a Coordinating Center

To be effective, the emergency social system requires a central coordinating headquarters which can pool information received from varied sources in the field, control appeals for outside aid, and allocate forces in the field and from the outside. Such a coordinating center was present, at least for the main search and rescue activities, in the Worcester, Harwood, Shelby, San Angelo, and Warner-Robins tornadoes, and in the Eagle Pass flood. It was absent, at least for long hours after impact, in the Waco, Flint-Beecher, and Judsonia tornadoes, in the Brighton gas explosions, and the Lampasas flash

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flood. What determines the development of such a center? Thompson and Hawkes (1962) discuss the emergence of a coordinating center as part of their analysis of organizational processes in disaster. They note:

> . . . When disaster comes unexpectedly, however, or when governmental officials cannot or will not act, the emergence of a communication and authority center is problematic (p. 290).

> It is likely to emerge wherever knowledge of needs and of resources overlap and an individual is able or willing to act on such knowledge (p. 291).

There is a hint here of a model which might account for the coalescence of such a center, in cases where it was not created by prior planning or authoritative decree. Organizations, sub-units of organizations, and individuals become aware of their lack of information about where to get or where to give disaster services. They search for information at the same time as they spread the information which they possess. Out of this process of seeking and exchanging information, some "nodes" of great density of information arise, as proto-suns and planets emerge in the dust-cloud hypothesis of planetary formation. Once a concentration of information builds up, it attracts more communications from those with requests or offers; information "snowballs" in proportion to the amount already present. Those who wish to make decisions may then locate themselves at this center, or else the people who happen to be there may take over decision-making functions.

Such a concentration is most likely to arise where there is communication equipment, or a socially central location for inter-personal contact, which is known and accessible to the organizations and individuals interested in the disaster. Good technical facilities are not themselves enough; if access is denied to outsiders, a potential center may remain limited to a single organization. An inter-organizational center can develop only by participating in an open exchange process.

The problem of where authority is located was studied intensively by Rosow (1955) in four tornado-struck towns. A number of hypotheses about the growth of coordinating centers emerge from his analysis. In the town of Shelby, the local police chief set up an effective radio communications net in the disaster area as described earlier. He was also known by professional reputation throughout the region. These two factors induced the outside police, militia, and Air Force

groups coming in to accept him as leader of the recovery effort in the community; and his office became linked to their communications system (Rosow, 1955, pp. 175-179, 190-192). Figure 3-7 shows the resulting system.
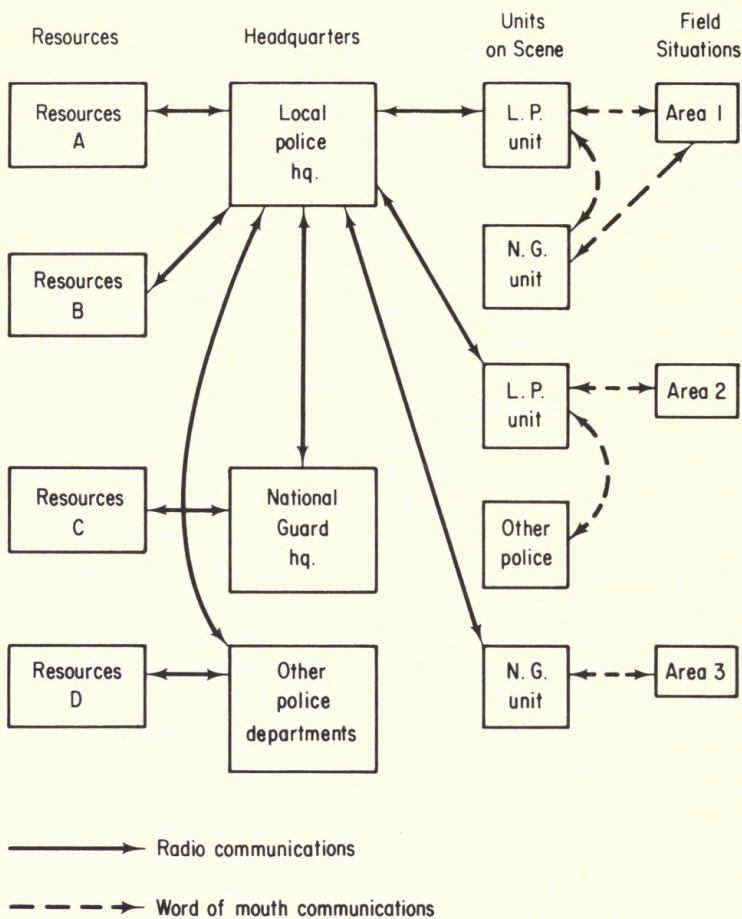
Resources   Headquarters   Units on Scene   Field Situations

Resources A	Local police hq.	L. P. unit	Area 1
Resources B		N. G. unit	
Resources C	National Guard hq.	L. P. unit	Area 2
		Other police	
Resources D	Other police departments	N. G. unit	Area 3

———▶ Radio communications

— — —▶ Word of mouth communications

Figure 3-7. Shelby: The Local Police Serve as Field Headquarters for Various Outside Organization's Units

In the town of Harwood there was not much of a local police organization, but there was an energetic civil defense leader who had maps, blood-type lists, and a centrally located office at the town hall. This office became a center of local communications, especially for word-of-mouth, on-foot transmission. The civil defense director consulted with the mayor, laid out search and rescue sectors, and dispatched volunteers to these sectors as they arrived at the town hall. A central listing of casualties and damages was virtually complete

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twelve hours after impact and provided information for all those
seeking residents of the impact area (Rosow, 1955, 193-198, 208-
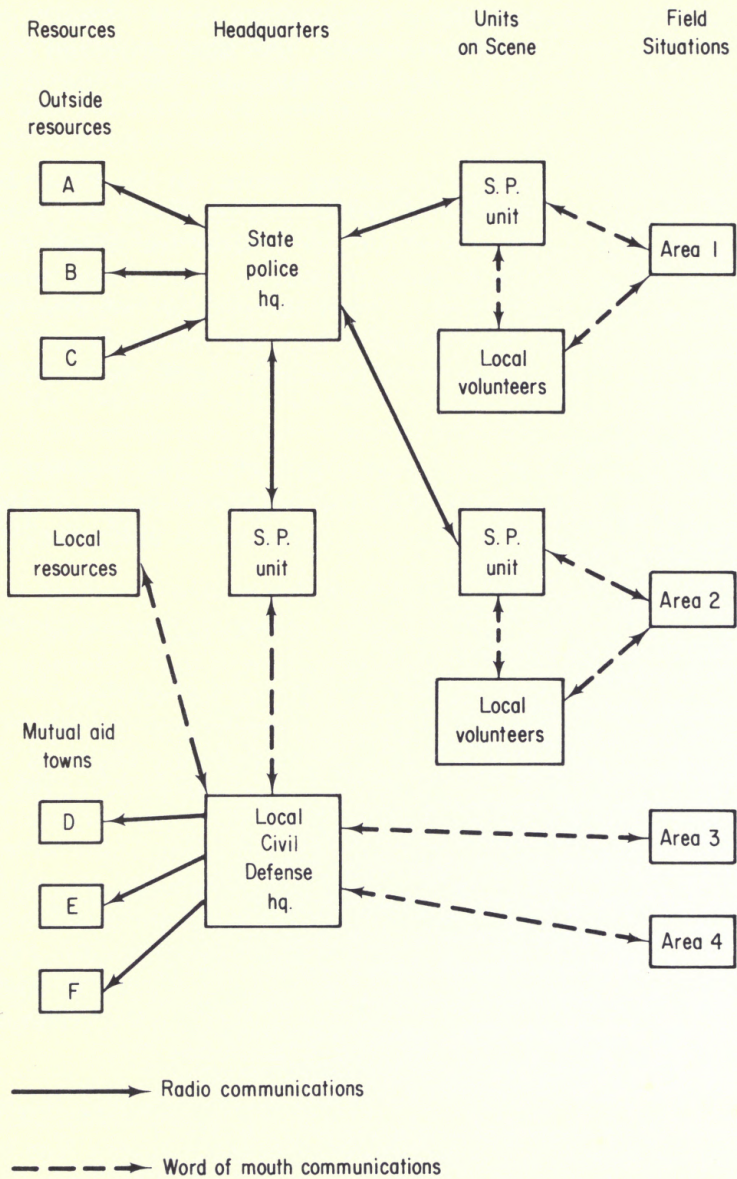210). Figure 3-8 shows this system.

Figure 3-8. Harwood: State Police Provide Radio
    Communications for Local Units

The local civil defense headquarters had only limited telecom-
munications. It was linked to a civil defense mutual aid system in

neighboring towns, but this system lacked a center to coordinate the dispatch of aid. Communications within the town were slow because of lack of two-way radio cars. The state police provided most radio communications in the open net between their Harwood post, their radio cars, and their headquarters some miles away. They coordinated the sending in of outside resources, and they provided mobile communications posts in the impact area (Rosow, 1955, pp. 206-208, 215-216).

The delay in creating a coordinating center in the Flint-Beecher tornado is discussed both by Rosow (1955) and by Form and Nosow (1958). The local state police post did not realize for three-quarters of an hour that there was heavy damage nearby. The state headquarters was confused by fragmentary and erroneous reports, sending many cars to various places to check them; it was not until one and a half hours after impact that headquarters realized where the main damage lay.

During this period, approximately three-quarters of the dead and injured were being removed from the impact area by civilian volunteers. The local state police post contributed manpower to this effort, but little coordination:

> An analysis of these actions indicates that members of the State Police at first did the very things that volunteers were already doing on the scene: digging for victims, carrying bodies, directing traffic, protecting property, and other tasks . . . . Only gradually did they begin to differentiate their activities and assume functions traditional to their work.

> Although all troopers felt that they were functioning at all times as members of the organization, most of their actions were actually spontaneous and uncoordinated. Because of the confusion at the Flint post and field headquarters, and lack of walkie-talkies, communication to individual troopers was poor. (Form & Nosow, 1958, pp. 147-149)

Once state headquarters had located the impact area, its forces were rapidly mobilized and sent in. A field headquarters was established about midnight, three and one half hours after the impact; a systematic block by block search was instituted; by 1:30 a.m. control points were established on all roads leading to the impact area; and by 3 a.m. the field headquarters had its own radio and telephone connections. By morning this headquarters had become the communication channel for all agencies.

In creating a central disaster headquarters, the state police actually served three functions. First they gave their own units a coordinating center so that they could function as an organization in the impact area. Second, they provided other agencies with communications between their headquarters and their field units, so that they could function more like organizations. Third, they provided for coordination between organizations, by creating a pool of knowledge of needs and resources on which each agency could draw and by making certain allocation decisions.

The delay in creating a central headquarters was especially serious in Beecher because there was literally no local government.

> Beecher actually is the name of a water district that
> serves an area which encompasses parts of two town-
> ships. It is not a community in a formal sense but is
> a combination of neighborhoods amorphously tied together
> by the overlapping jurisdictions of Genesee County, the
> Genesee and Mt. Morris townships, the Beecher Water
> District, and the Beecher School District (Form & Nosow,
> 1958, p. 56).

When this anarchic patchwork was hit by the tornado, there was no local authority to which either insiders or outsiders could turn.

In this authority vacuum, the governor gave the state police overall coordinating authority. However, they did not exercise this authority to create an effective coordination center. Rosow (1955, pp. 352-362) attributes this to a conventional norm of respect for local authority and a rather limited view of its police functions. They worked closely with other units of the police cluster—police of the adjacent city, National Guard, and private industrial police—but made little effort to coordinate the activity of civilian agencies—the Red Cross, the Civil Air Patrol, the contractors, the fire departments, and the nearby city governments. The state police were incapable of acting "govern-mentally" and broadly beyond their specialized functions.

The Relationships of Organizations and Mass Behavior

The collective behavior of the public and the activities of formal organizations meet at many points. The public may get in the way of organization members trying to reach their assigned place of work. They may contribute materials to the organizations or provide volunteers to the organizations, and they may seek services from the organizations. Most organizations have some normal relationship to the

general public—as an electorate, a source of contributions, customers for services, or an audience. In the compressed time of the emergency social system, new relationships with the public have to be worked out. Therein lies much of the difficulty of rendering the emergency system effective.

The Public as an Obstacle: Mass Convergence

The problems of public convergence behavior have by now been explored in many disaster studies and are summarized in the monograph by Fritz and Mathewson (1957). A vivid expression of the problem was given by a military man at the Waco tornado: "There were thousands of persons milling around; it looked like the storming of the French Bastille" (Moore, 1958, p. 11). This seems to happen in every peacetime disaster studied except for floods which make travel impossible. The blocking of incoming rescue equipment and outgoing vehicles carrying wounded people to hospitals is reported in the Arkansas, Beecher, Waco and Worcester tornadoes as a serious problem.

Efforts to control this influx have sometimes been effective after the immediate emergency was over, but the difficulty of setting up an almost instantaneous control of access routes makes it unlikely that it can be eliminated. Whether it would always be desirable to completely eliminate mass convergence may be doubted in view of the many services quickly performed by the convergers and the relative slowness and limited resources of the formal organizations. On the other hand, once specialists and their equipment are available, it would be useful to turn off the mass convergence and clear the roads for the organizations. This is typically done by setting up control points on the main access routes well back from the impact area and screening traffic trying to enter; to do this effectively and without causing great delays is a major enterprise in itself.

Both convergence and the abandonment of organizational roles have a common origin: the desire of people to play family or community-member roles in the disaster situation. Fritz and Mathewson (1957), in their summary of the convergence problem, suggest that inaccurate and ambiguous broadcast news and the interpersonal flow of rumors outside the impact area arouse far more people to be anxious about family, friends, and relatives than need be. First news flashes are possibly more often inaccurate than accurate, because they are based on fragmentary and speculative reports and are put out without any check on their accuracy, to meet competitive standards which emphasize speed rather than correctness. They are likely to set many more people moving than actually need to be concerned.

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Finally there is a component in the converging mass—its proportion is controversial and we do not have even good estimates—of people motivated by idle curiosity rather than a desire to help. These are the sightseers who respond to radio bulletins of fires, explosions, and possible airplane crashes, at which they could not possibly be of help, by jamming the highways and interfering with organized activities. Perhaps a greater public awareness of the extremely anti-social nature of this behavior would help to control it, as would a more responsible approach by the commercial news media.

The Public as Source of Supplies to Organizations

In a society as rich in material goods as ours, the general public can serve as a warehouse of supplies needed in disaster: flashlights, blankets, clothing, food, hand tools, power tools—even blood. The process of mobilizing these supplies, however, is full of difficulty and has often created such convergence of people and materials that those who called for public aid wished they had not.

> In the Flint-Beecher, Michigan, tornado, for example, a public appeal for flashlights was made over the radio. Over 500 persons individually responded by driving their automobiles toward the stricken area to donate their flashlights, thus greatly aggravating the severe traffic congestion . . . . Just as one of the major hospitals was beginning to achieve order in the processing of disaster victims, it was suddenly confronted with about 2,000 unwanted blood donors, who appeared as a result of appeals broadcast over the local radio stations (Fritz & Mathewson, 1957, p. 26).

The influx of clothing to the relatively small Arkansas communities struck by the 1953 tornado was overwhelming, and itself constituted a serious problem for the local disaster authorities, since most buildings had been blown down. Fritz and Mathewson write:

> The needs in disaster are strategic and selective needs. Equipment, supplies, and services are needed in particular quantities, types, times, and places. The mass media are not well adapted to serve this strategic supply purpose, since there is little control that can be exercised over the potential donors once the appeal is made. The central difficulty in the use of these media, in other words, is that they require institution of a screening function after the supplies begin arriving rather than prior to their solicitation (1957, p. 26).

These writers suggest that if mass appeals have to be used at all, or if mass contributions cannot be avoided, there be created a central supply clearinghouse outside the disaster area, and its location impressed upon the public mind. This clearing house would be connected to the central coordinating authority, which could screen all public appeals before they are issued, and allocate resulting supplies rationally and efficiently to the disaster scene. Here Williams' (1956) emphasis on feedback and control messages corresponds very closely to reality; rapid "cease and desist" appeals could be broadcast if the rate of arrival of given items indicated too great an oversupply. For such control to be effective we would have to know the approximate time-lag and momentum of public response and the snowball effects of interpersonal spreading of messages from the mass media. The leaflet-dropping experiments of the Washington Public Opinion Laboratory (De Fleur and Larsen, 1956) suggest the model for the study of these phenomena. By having the clearinghouse out of the way of traffic into the impact area, it might also be possible to absorb most over-response to appeals without loss to the rescue-relief effort.

The Public as a Source of Volunteer Personnel in Organizations

We have noted the enormous amount of emergency work done by the residents of the impact area and the early convergers from other areas as well as the serious problems of lack of skills, coordination, and equipment which reduce the effectiveness of this great input of effort. Perhaps the most important single device for improving this effectiveness would be collaboration between the mass public's informal rescue-relief work and that of organizations. Organizations linked into a centrally coordinated system can direct this manpower to places where it is most needed and avoid overcrowding in other places. They can provide equipment and specialists to complement the mass of semi- and unskilled rescue workers. And they can provide competent work-group leaders to compensate for this labor force's lack of disaster skills. The proper kind of organizational framework could have a multiplier effect on the output of mass activity. An improper attempt to control the mass assault might only strait-jacket it.

The normal protective agencies of the community are accustomed to thinking of the mass public as a nuisance, to be controlled and kept out of the way in normal, small-scale emergencies. Their monopolistic attitude toward emergency work is likely to persist even when the task is far beyond their capacity. The more rigid and authoritarian the organizations, presumably the less easily they can cope with the opportunity and the necessity of using public help.

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Form and Nosow report the response of several organizations to the use of volunteers.

There is no clear definition given by the Michigan State Police as to what a "volunteer" is. The only people who seem specifically exempt from this category of volunteer are members of the Michigan State Police . . . . The impression received is that the State Police in the field worked intermittently with the people around them, and that specific work groups composed of volunteers were not formed (1958, p. 151).

The Genesee county fire department was in one sense entirely composed of volunteers, but they were trained and formally identified with their organization. They "did not spontaneously attach individuals in the disaster area to their work teams."

Rather, their help was chiefly a group of auxiliary firemen selected from a standing list and from a group that volunteered at their firehouse in Geneseeville. This, in a sense, formalized the relationship between the Genesee firemen and their volunteers (1958, p. 173).

For the National Red Cross officials in this disaster, everyone in the local organization was defined as a "volunteer." The locals on the other hand tended to distinguish the "regular volunteers" from the "transient volunteers." The local officials felt quite positive toward the use of all forms of volunteer; the rank-and-file "regular volunteers," however, "had some feelings of ambivalence toward the use of volunteers." Apparently "this loose and ambiguous definition of volunteers has the effect of breaking the bonds of identification so necessary for the persistence of the solidarity and morale of working groups." It is a wise leader who knows his own members. Cooperation with outsiders can perhaps best be achieved if everyone is clear about who is inside. The social heterogeneity and social distance within the Red Cross were a basic cause of this confusion (Form & Nosow, 1958, pp. 211-213).

None of these examples suggests a very effective use of non-members as temporary helpers by organizations. The Beecher study concludes from its survey of 116 participants in informal rescue groups:

Only 5 per cent of the acts in the emergency stage were performed in conjunction with identified organizations operating in the impact area. Only 3 per cent of the

activities of individuals in their first phases were associated with organizations. In their third phase, one-tenth of the acts were so associated (Form & Nosow, 1958, p. 115).

Rosow's (1955, p. 312) description of the uncoordinated rescue teams in Beecher picking over piles of wreckage which some previous team has already searched, and hearing behind them other teams pushing the wreckage around which they have just finished searching, vividly illustrates the inefficient use of personnel in an unorganized mass assault.

In the Waco Tornado:

The lack of control over volunteer workmen was often dangerous, the City Engineer pointed out: "We had a lot of people working around and sometimes they were working on each other. In one spot we were trying to get a valve uncovered, but we had a heck of a time keeping others from throwing lumber down on top of us!" (Moore, 1958, p. 14).

Volunteer helpers who formed as a team before they arrived, and who came from the same non-disaster organization, were much more effective than random assortments made on the spot. Groups from the steel workers' union, groups from other local unions and student groups from the local university all formed effective teams. For those who were not organized in advance, leadership and communications equipment were eventually provided by the military organizations.

Military workers brought organization to the rescue efforts by incorporating civilian workmen in their teams. By the second night these teams were commonly composed of 15 men under a leader and an assistant leader, with a walkie-talkie man to keep contact with headquarters and other nearby teams (Moore, 1958, p. 14).

In another tornado-struck town, a minimal organization of volunteers was created by a police officer who formed the volunteers up into teams of five with one man in charge before they were sent into the impact area.

Further study of effective modes of relationships between disaster organizations and on-the-spot volunteer helpers should be of great practical value in disaster planning. The idea that everybody

should be organized in advance is utopian. Organizations should more effectively exploit the spontaneous mass response to disaster.

The Public as Consumers of Organization Services

An organization providing disaster services, like any other public service producer, cannot do its job unless it makes contact with those who need it.

When large numbers of the public find themselves in need of medical services, they generally know where to go—the hospital. In the Beecher, Worcester, and other tornadoes, "the" hospital was usually the largest, best-known one in the area (Rosow, 1955, p. 153). The result of this mass definition of the appropriate place to go— apparently shared by such key personnel as ambulance drivers—was a great overload on certain large hospitals, while smaller institutions, including some much nearer the scene, were under-utilized (see Raker, et al., 1956, p. 28).

The situation was still more difficult for newly created hospitals and first-aid stations. We are told that "cars loaded with victims drove right by," that the services were under-utilized, that few people appeared until later when the rescue and rehabilitation workers used the facilities for care of minor injuries (see Form & Nosow, 1958, pp. 47-53). We do not know to what extent this happened because of public ignorance of the facility, and to what extent because of public definitions of which facilities are appropriate to the needs of injured people. The wide variation in quality among places calling themselves first-aid stations may contribute to this problem of public definition.

In the case of first-aid stations, three things seem to be needed. There should be some way of grading and labeling them as to whether they have competent personnel and adequate supplies, so the customer can make a more rational decision. Their existence should be made widely known, especially to people transporting injured victims. And the public should be informed, preferably in advance, of the relative dangers of delaying all treatment until hospital facilities are reached and of delaying hospitalization to obtain first aid. We know little about how the public feels injured people should be handled; there is reason to believe that they are very badly informed about physiological shock, bleeding, extensive burns, or fractures. Unless they are better informed, they will continue to make irrational decisions. Similar problems arise with non-medical services.

If sometimes the public goes to the wrong places, it is also true that the organizations sometimes provide the wrong services. The American Red Cross has a notable record of providing mass shelter for evacuated flood victims in the great river-valley floods. Tent cities built with army supplies and administered competently by the Red Cross sprang up in the Mississippi flood of 1927 and the Ohio floods of 1937 (American Red Cross, 1928 and 1938). When tornado disasters struck Beecher, Worcester, and other areas, the Red Cross tended to think of the evacuees as needing mass shelter. In the tornado disasters such mass shelter was invariably almost unused by victims, although it sometimes served later as quarters for imported rescue and cleanup workers (Rosow, pp. 89, 120, 150). The surveys of the Arkansas tornado victims (Marks & Fritz, 1954, 1, pp. 169, 258) and the Eagle Pass flood evacuees (Clifford, 1956, p. 118) showed that almost all found temporary shelter with friends or relatives. In Farmington 89 per cent shared another family's home as their first shelter. Of those staying with another family, 63 per cent were with relatives, 32 per cent with friends, and only 5 per cent with strangers or others (Klausner and Kincaid, Tables 13 and 21). The difference between these cases and the river-valley floods lies in their ecology: these floods make whole communities and districts uninhabitable and knock out entire extended-family and friendship groups, while the tornado or limited flood does not upset a workable ratio of evacuees to untouched relatives and friends (Young, 1954).

Methods for Increasing the Output of the Emergency System

If we go back to the scheme of relationships influencing output of the emergency system (at the beginning of this chapter), we can summarize and locate the main proposed methods for improving this output. One kind of improvement reduces the negative effects shown in the scheme; another kind increases the positive relationships between activity and output.

Prior Training

Prior training, either of the general population or of a scattering of potential leaders in each neighborhood, may reduce the rate of non-adaptive individual behavior (panic, shock, etc.) at the same time that it increases the competence of disaster role performance. The panic-shock reaction itself does not seem to be quantitatively important in the disasters studied, but the low efficiency of the mass response is clearly due to lack of skills, and individual role incompetence in the face of very strong motivation to help loved ones appears to create

later emotional difficulties. It seems unlikely that training will over-come the tendency to abandon organizational for family roles among people who believe their families are in danger. However, this number may be reduced by positive means to assure members of their families' safety.

Accurate Mass Communications

Accurate mass communications could have several important effects. By providing the mass public with trustworthy information on the scope of impact, it could reduce unnecessary convergence and abandonment of organizational roles. For each individual to go per-sonally and look at his family is an extraordinarily inefficient system of communication; but our normal telecommunications simply cannot cope with the load of messages people want to send in a disaster. Broadcasting news of the precise areas of danger would of course arouse some people to leave organizational and other roles and con-verge on the scene; but as long as the area of actual impact is narrower than the area of feared impact, there will be a net gain. Of course, complete and accurate registries of casualties and evacuees, made available through mass media or communications centers, would be still more effective; but this highly individualized information takes so much time and effort to put together that it is more feasible after the immediate emergency period than during it.

A Communication Center

A communications center to receive all reports from field units would permit more rational allocation of organization units and of resources coming in from the outside. It would also be necessary if mass communications are to be made accurate. The increase in out-put due to more effective organization activity might be very great, especially during the period when rescue and medical care are the primary needs and time is crucial. Such a center would permit organized activity by those agencies which do not have their own two-way radio system, and it would link those which do have such field communications into an information pool, multiplying many times the information available to each. Such a communications center would also permit a further step to be taken: central planning and allocation of resources by an overall disaster authority.

Organization

Organization of the informal mass assault and its integration with organizational activities is another way in which available resources can be rendered much more productive. Such a simple technique as the assignment of a leader to each informal work group and the assignment of areas with some means of marking off what has been done could greatly reduce wasted effort and uneven coverage. The linking of such semi-organized groups to organizations with specialized equipment, and to the communications center, would again multiply effectiveness. Such links are now sporadically improvised; if organizations in the field were trained to promote them, the "informal mass" might become more of an organized body. The art of quickly organizing a large body of volunteers could be developed if organizations were willing to admit their legitimate function in large-scale disaster.

The direct effects of the four proposed policies on the emergency social system can be shown in a simplified scheme of variables (see Figure 3-9). By referring to the earlier scheme (Figure 3-1), it is possible to trace out a number of indirect effects, both positive and negative. Convergence might be reduced by withholding information from the mass media or by concentrating police efforts on sealing off approach routes; but this entails a cost in reduced output of the "informal mass assault," which has to be roughly weighed against the possible gain. We have assumed that some desirable measures are impossible— for instance, making every organization member stay on his job regardless of the plight of his family. The problem is to maximize output within the (crudely indicated) system of constraining relationships.

Training any significant number of citizens, training organizations to assist and work with informal volunteer groups, preparing for accurate mass media coverage, and creating a centralized disaster communications system all require community planning and organization in advance of the disaster. Skills and coordination do indeed eventually emerge in unprepared communities as the disaster goes on, but at the cost of great inefficiency and loss in the early phases. Whether the investment in such community disaster preparation is considered worthwhile depends on the amount by which it would reduce losses in various types of disasters, relative to the probability of those types of disaster. Areas subject to frequent threat of tornadoes and hurricanes have already begun to develop such systems—notably Texas and Florida. The creation of such systems to cope with tornadoes, hurricanes, floods, earthquakes, and accidental explosions in other parts of the country is largely a question of cost.
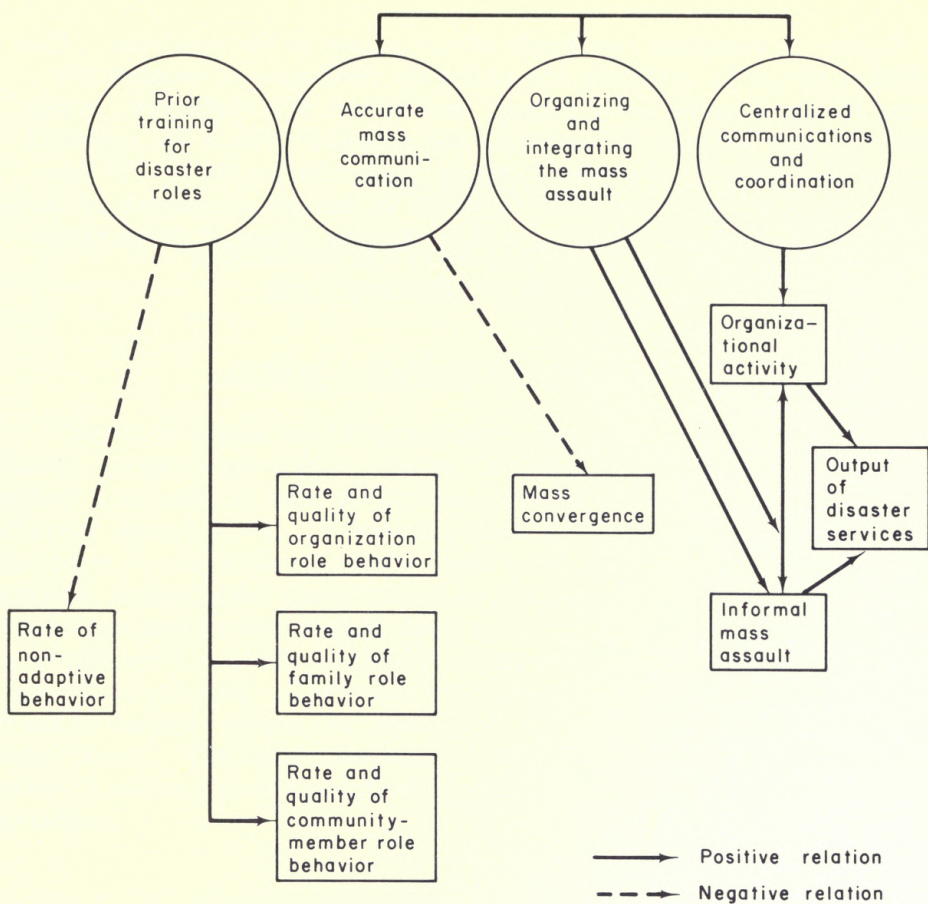
Figure 3-9. Direct Effects of Four Policy Variables on the Emergency System

Whether the kind of emergency social system studied in one-community disasters has any relevance to the problems of regional or nation-wide destruction, as in major floods, earthquakes, or massive nuclear attack, is not easily answered. We have tried to suggest some limiting conditions by making comparisons with the flood and atom-bombing situations which have been studied. The breakdown of organized civil defense in the major fire-raids on German and Japanese cities and in the atom bombings of Hiroshima and Nagasaki suggests that systems adapted to one scale and type of impact may be quite ineffective in disasters of a different order of magnitude. The question cannot be answered by simple extrapolation from smaller-scale disasters.

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Rather it requires two kinds of extension of the analysis. One would have to try to estimate the probable response of community systems to much more devastating, and technically different, types of impacts, and second, to estimate the extent to which the national social system could contribute to these community efforts. If this is done, it will become possible to guess at the consequences of large-scale disasters and the extent to which various types of preparation would reduce losses.

CHAPTER 4

THE RESTORATIVE SOCIAL SYSTEM
IN COMMUNITY DISASTER

Phases in Complex Social Events

Because some social processes take longer to work through than others, large-scale social events like disasters, revolutions, or innovations are usually seen as having several phases, in which rather different things go on. Sometimes the division between phases is arbitrary because the variables which characterize them change by degrees; sometimes sharp rises and falls define a turning point. The phases are not by any means identical in each event of a certain kind; we would need to study carefully many cases to pick out the more frequent sequences. The scientific goal is to develop a system model or set of models which can account for the observed variations over many cases. The characterization of phases is only a qualitative step toward a more precise method of analyzing change in a system of variables.

The Emergency Social Systems

We defined the emergency social system as the set of processes which operate immediately after a sudden disaster. In the typical community physical disaster this period is dominated by the need for saving lives and relieving physical distress. The need is met by rather simple and direct social responses because there is no time for more elaborate sequences. The processes at work include the activity of some formal organizations which are prepared for instant response—the protective services, and a few other disaster-prepared organizations such as public utility companies, military units, hospitals, and news media. If the scope of the impact is small enough, the disaster-ready organizations can deal with it alone, usually helped by the family groups directly involved. But in a large-scale disaster formal organizations can meet only a small fraction of the need for immediate rescue and relief services, and informal mass action must play a large part if loss and suffering are to be minimized.

These informal mass processes begin with individual psychological responses and improvised behavior in primary-group roles. They

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develop through interaction in small face-to-face groups, direct personal influence and informal leadership. They proliferate through interactions between many small groups, and within large undifferentiated crowds, for example by imitation and by the dissemination of accurate and inaccurate information. These relatively unorganized mass responses form what has been called the "informal mass assault;" they also result in "mass convergence" and in some cases in the mass abandonment of organizational roles for family and community-member roles, both of which may seriously hinder rescue and relief. In most of the disasters studied recently—limited physical impacts like tornadoes, explosions, and flash floods—the crude responses of the emergency social system have met the immediate needs for rescue, medical care, and food and shelter for the homeless.

The Organized Social Response

After a few hours or a couple of days, the slower-responding organizations come into action—the local, state and national government, large commercial enterprises, voluntary relief agencies, and outside organizations generally. Coordinated programs are sometimes established. The speed of these organizational responses is determined by the time required to get information, to have the staff formulate plans, to hold meetings of decision-makers within and between organizations, and to move equipment and manpower.

At the same time the effects of face-to-face interactions are spreading through the community, some of them reinforcing and cumulating, others cancelling out. People have time to converse with their friends and acquaintances, to see and hear what other people are doing. Each individual is exposed to and exposes others to a sequence of such discussions and observations, in the course of which experiences are shared, and ideas and expectations may shift or solidify. After a number of such exchanges by each member, a community consensus may develop; or there may be a growth of divergent beliefs and standards in different subgroups. People's needs and interests, their ideologies and intellectual training, and their patterns of contacts with other sorts of people, will determine the outcome for individuals and for the community as a whole. These processes have been studied in many normal circumstances, such as election campaigns, the spread of influence on consumer decisions, and the spread of innovations. Various types of models have been devised to simulate them, including the computer simulations of social systems (McPhee, in press; see also McPhee & Glaser, 1962).

This second phase is one of organized social response, in contrast to the fragmented responses of individuals, groups and

organizations during the emergency period. In the sudden, limited disasters which are most often studied, most of the immediate rescue and relief work has been done during the emergency period, so that the predominant task of the organized social response is restorative. It must organize temporary provision of food, shelter, and emotional support for the victims, while carrying out the restoration of permanent facilities for meeting these needs. When the development of organized, community-wide social response corresponds to this phase of the needs of the community, we can call it the "restorative social system."

It should be emphasized that these particular combinations of types of social process with types of social needs do not always occur. When there is ample warning of coming disaster, the organized social response can carry out preventive or protective activities as well as handle restoration afterwards. When the impact is so widespread or of such a nature that the rescue-relief needs cannot be quickly met by the mass assault—as in large-scale floods or the atomic bombings in Japan—the organized social response may have to deal with problems of rescue and immediate relief of suffering. In concentrating on the cases where emergency needs are met by the emergency social system, and the restorative needs are met by the organized community response we are simply describing one frequent phase-pattern.

In our first chapter we indicated the great diversity of disaster situations, defining them broadly as large unfavorable changes in the conditions confronting a social system. This diversity is particularly apparent when we try to generalize about the processes of restoration of equilibrium after such changes. In the face of this diversity, we have a relatively small number of cases or restorative systems in physical disasters which have been carefully described; and virtually none of which have been quantitatively studied. There are no periodic surveys—let alone panel studies—of the opinions, activities, and conditions of the public at different stages of the restoration process, aside from the special area of relations between evacuees and host families. Disaster research has paid less attention to this period than it has to the immediate response to impact in spite of the fact that conditions in the period of restoration are much more favorable to use of normal research procedures.

What follows therefore is an attempt to pull out of a number of qualitative case studies some common or relatively frequent kinds of response to the problems of the restorative period. Most of these types of response have been noted by other analysts of the disaster studies. They include the development of social norms of mass altruism and emotional supportiveness (the "community of sufferers"), the breakdown of normal government leadership and its supplementation

by various kinds of citizens committees drawn from a wide range of institutions, the "cornucopia" of outside aid which renders restoration a reasonable short-run goal in most small-scale disasters, and a variety of termination processes by which the altruism and institutional cooperation of the restorative period are broken down and replaced by normal competition and social distance.

The Therapeutic Social System in Situations of Large-Scale Suffering: Definition and Measurement

A striking phenomenon reported in many disaster studies is the great emotional solidarity and mutual helpfulness of the disaster-struck population. An outpouring of altruistic feelings and behavior begins with the informal mass assault and carries on for days, weeks, possibly in some cases months after the impact. The ideal type of this response is described by Fritz (1961) and by Wolfenstein in her chapter on "The Rise and Fall of the Post-Disaster Utopia" (1957, pp. 189-198). The characteristics of the therapeutic social system are summed up by Fritz as including:

—the reduction of social distance and social distinctions, permitting a high rate of interaction among all types of community members

—the reduction of restraints on emotional expression, and the tendency to respond to other people's expressions in emotionally supportive ways

—a high rate of participation in cooperative work to meet the needs of the community; the availability of directly meaningful activities to all members

—the allocation of goods and services on the basis of need.

The result of these behavior patterns is a social environment which helps to compensate for the sorrow and stress under which many members are living with an expected abundance of personal warmth and direct help. Information about needs of community members is widely shared, there is rapid consensus on actions required to meet these needs, and highly motivated work for common purposes. These behavior patterns persist until the more urgent needs are met; then the perceived reduction of the urgency of needs of others, and growing concern with neglected private concerns, swings the system back toward normal, self-oriented, competitive behavior.

These patterns were observed in Prince's (1920) pioneer study of the 1917 explosion in Halifax (which "gained the appellation of the City of Comrades"), in a study (Kutak, 1938) of the Louisville flood of 1937 (where "the democracy of distress" was noted), in bombed London during World War II, in flooded Holland in 1953, and in tornado-struck communities in the mid-west. They also appear in older historical and journalistic reports of such large-scale disasters as the Chicago fire and the San Francisco earthquake. But there are cases which suggest that the response does not always occur, at least in full-blown form; Wolfenstein (1957) suggests a lack of such behavior in A-bombed Nagasaki, and Lynd (1937) describes how, in the sixth year of the Great Depression of the 1930's, a Middletown editor wished for a plague to take away the "worthless" unemployed.

What is the empirical status of the concept of a "therapeutic social system?" It has been reported by many observers. Based on these descriptions, social scientists speculated about the individual psychological processes which underlie it, and about its social functions. But there is very little systematic information about it. We do not know what proportion of the people participate in it for how long, or over what areas it spreads; we do not know through what processes "therapeutic behavior" is elicited, and under what conditions it becomes the predominant mode of behavior. Those who discovered the phenomenon and those who made preliminary analyses of it have performed an essential first step. It now must be studied systematically.

To start with, the phenomenon itself needs to be more precisely defined and measured. Although exact figures are not needed, it would be useful to know the approximate proportion of residents in disaster-struck communities that engage in the behaviors which define the therapeutic social system. In a given disaster is it 99, 51, or 10 per cent? The first hard data are provided by the NORC's sampling of four townships in the Arkansas tornado of 1953 (Marks & Fritz, 1954). This survey found that 46 per cent of the impact area residents and 42 per cent of the residents of undamaged sectors at some time gave informal relief to victims. Formally organized relief work was engaged in by 20 per cent of those in undamaged sections, but by practically no residents of the impact area; while rescue work was done by 27 per cent of impact area and five per cent of undamaged area residents. (The study did not measure more subtle kinds of therapeutic behavior, such as listening to victims tell their story, giving reassurance, expressing solidarity.) The uses to which such quantitative data can be put, in making models for the analysis of social processes over time and in comparative analysis of different situations and social structures, will become clear as our discussion proceeds.

The NORC report distinguishes—in a few tables—between supportive behavior directed toward members of the primary group and toward other community members generally. Much of the emergency sheltering of victims was done by relatives and friends, for instance, while rescue was performed mainly by mere acquaintances and strangers. It is possible that much of what is called the therapeutic social system is actually the work of primary groups looking after their own. The Arkansas communities were described as being close-knit, with many extended kinship groups; perhaps in other types of communities more of the supportive behavior extends beyond kin groups. Where kinship ties are strong and extensive, their activation to provide support may meet most of the immediate needs of victims; where they are weak and less abundant, the more generalized form of supportive community relationships may be necessary if mass needs are to be met. This distinction should be explored in future research.

What degree of participation is implied by the concept of the therapeutic social system? What proportion of the population need to be involved to create the phenomenon? Is there some minimum required to get the results attributed to it, or can a society be more or less therapeutic in direct proportion to the amount of participation in therapeutic behavior? In the Arkansas tornado studied, the 40 per cent participation in informal relief-giving and the 20 per cent in formal relief work appear to have provided for the victims' needs. A higher percentage may be required to make other aspects of the system effective—for instance, the willingness to ignore normal social distinctions and social distance and participate in supportive relations with victims generally. Free expression of emotions may be hampered if some large minority or a majority react negatively to it; and it is noted in some studies that the presence of even a few "grabbers" may spoil the operation of free sharing according to expressed needs (Nauta & van Strien, 1955, 65-67, 108, 200-203). The therapeutic system can apparently exist in spite of a certain amount of anti-social activity—grabbing, looting, profiteering or union obstructionism—but as time goes on, the inability to cope with accumulating charges of exploitation of the therapeutic system seems to be one of the forces bringing it to an end. The effect of such changes on public welfare programs in normal times is illustrated by recurring crisis such as the Newburgh, New York, affair in 1961.

When an entire community is physically uprooted, as in evacuation from a flood, everybody becomes a victim to that extent and the opportunity to simply "sit the disaster out" is reduced. When the people so uprooted are herded together in a place of refuge, interaction with other victims is maximized. Indiscriminate physical proximity, as is well known from urban sociology, does not in itself produce solidarity and

communication; but when accompanied by the visibly common nature of the stress on all those present, it may produce something approaching universal participation in the therapeutic system.

To what area does the therapeutic social system extend? Does it include only the impact areas, the entire community, or some wider region? The Arkansas study showed a high rate of participation in relief work of one kind or another throughout the four townships studied. Money, supplies, messages and visits also came from many parts of the state and from nearby states, and eventually all over the country. However, the rate of such therapeutic behavior must have fallen off drastically from the 40 per cent who participated in the four townships. There would of course not have been room for 40 per cent of the people in the state to go there. Indeed a very small percentage of the total population of Arkansas and some neighboring states sending bundles of clothing to the victims literally flooded community buildings with packages. There is probably an optimum rate and physical spread of supportive behavior for particular kinds of disaster; the problem is to create feedback mechanisms which will adjust this behavior to needs, preventing too much as well as too little response.

Studies in rural sociology have shown us the fuzziness of the concept of "community"—there are varying rates of personal contact, psychological identification, economic relationships, etc. between people at varying distances, in most cases without clear natural dividing lines (Kolb and Brunner, 1940, Chs. III & V). Likewise the therapeutic social system in disaster involves a variety of behaviors, with different densities and distributions over different areas. Supportive behavior probably comes closest to being universal in the impact area, where everyone is brought face to face with suffering and need. In the rest of the politically defined community, and still more in the wider society, social processes may not create motivation to participate, or provide the opportunity to do so. The major function of large formal organizations like the Red Cross is to provide opportunities for helping people remote from the scene and without personal ties with the victims. It may prove useful to divide the notion of the therapeutic social system into the "face-to-face supportive community" and the "wider supportive society." Then the behavior of the local population and that of the region or nation as a whole—as in the Holland flood disaster—can both be appropriately analyzed.

Individual and Community Variables

As we have noted, there are several vivid descriptions of the growth of altruistic behavior in community disaster, but virtually no

systematic data. The classic description is found in Prince's early study:

> The idea spread of taking the refugees into such private
> homes as had fared less badly. Imitation is the foundation
> of custom. It became the thing to do. The thing to do is
> social pressure. It may be unwilled and unintended but
> it is inexorable. It worked effectively upon all who had
> an unused room (1920, p. 637).

The general idea expressed in the studies is that in the first few hours of a disaster the response is based largely on individual emotional reactions of sympathy, but that as time and social interaction go on, social norms are created or focused which do not depend entirely on personal emotions but on a sense of moral obligation, or an awareness of the moral expectations of others.

Some of the individual psychological mechanisms accounting for community-oriented behavior were presented in Chapter 2. There most of the variables were individual attitudes and beliefs, but two other kinds of individual variables played strategic parts: relational and contextual. The individual "who had social ties to victims," and "who was linked to others in the informal communications network," is being characterized relationally. "The magnitude of others' losses" is a characteristic of the individual's social context. These two classes of variables characterizing individuals point directly toward community characteristics.

Now we will concentrate our attention on community characteristics, in the effort to explain why a high rate of supportive behavior is generated toward victims of large-scale suffering of certain types or in certain areas, and not in others. In this endeavor it may be helpful first to classify community characteristics formally or methodologically. This will not only make clearer what we mean by a "community characteristic," but will provide the key to certain otherwise paradoxical findings. Four types of characteristics of collective units have generally been distinguished (Barton, 1961; Lazarsfeld & Menzel, 1961).

1. Additive characteristics are simply derived by cumulating the characteristics of individual members of the collective unit in the form of a rate, a percentage, or an average.

2. Distributional characteristics emerge only when we look at the distribution of individual attributes for the entire collective unit: for example, the variance of individual losses, the social homogeneity

of the community, or the extent to which losses are correlated with high or low social status.

3.   Relational pattern characteristics derive from the structure of pair-relationships within the collective.   If there are many such relationships we say that a community is "close-knit."   These pair-relationships may form isolated cliques or an overlapping pattern, so that we could characterize the community as "clique-ridden" or "informally integrated."   Liking and disliking, communicating, influencing, being related by family ties, or any other form of relationship between two people can form the basis of a relational pattern for the collective unit.

4.   Integral characteristics derive not from individual members, but from common objects pertaining to the community as a whole: its physical features, the content of its newspaper, the legal form of the local government.

Relationships among community variables can involve any combination of these four types.   Wealthy communities have a higher per cent of Republicans (additive-additive).   Wealthy communities have better schools (additive-integral).   Communities with non-partisan local elections tend to have a greater concentration of political power (integral-distributional).   Socially homogeneous communities tend to be more informally integrated (distributional-relational pattern).

The relation of one additive community characteristic to another takes two quite different forms.   In the simple form of such relationships, one variable affects the other for each individual, and therefore the rate of one variable tends to rise and fall with the rate of the other variable in the community as a whole.   Thus: Individuals who suffer losses tend to feel miserable.   Hence communities with high rates of losses would be expected to have high percentages of people feeling miserable.   Likewise: An injured person is less likely than an uninjured one to go around helping others.   Therefore, the more people who are injured in a town, the fewer people there are available to help others.

In the second form, the summing up on one variable for the community as a whole creates the context in which other individuals behave.   A community with a high proportion of people injured will naturally have a high proportion of people who feel that they have suffered deprivation.   (Simple additive relationship.)   On the other hand, both the injured and the uninjured will be surrounded by injured victims; this may influence both their behavior and their perceptions of the situation, through what might be called an additive-context relationship.   The presence of more victims increases the opportunities

of the uninjured to give help, and it gives the victims a frame of
reference in which they are less likely to consider their deprivation
as unique and overwhelming. As we shall see, the additive-context
relationship may run counter to the simple additive relationship and
produce paradoxical consequences.

Processes Creating Altruistic Norms and Behavior in Community Disaster

Why do some situations of large-scale human suffering generate
a high rate of supportive behavior toward the victims, while others
do not? In the following pages we present a set of propositions to
account for this difference in community response between situations.
Many of these propositions are derived from the published analyses
of response to disaster by Fritz, Wolfenstein, Prince, Loomis, and
others. Others are derived from my own comparison of physical
disasters with situations of mass suffering in which altruistic behavior
was much less general. These situations include the Great Depression
of the 1930's as described by Lynd, Schlesinger, and others; recent
recessions and community economic crises as reported by sociologists
and social journalists; cases of mass suffering among migratory
workers and uprooted farmers, as described by McWilliams and others;
the responses to economic suffering in the 19th century industrial revo-
lution, as described by Hofstadter and others; the German persecution
of the Jews under the Nazis. We have also considered chronic con-
ditions of mass suffering which have been tolerated for long periods
in American society: the "snake-pit" conditions for hundreds of
thousands of inmates of so-called mental hospitals; the inhuman con-
ditions in most correctional institutions; the toleration of slavery for
three generations after the Declaration of Independence, and the racial
oppression and neglect of human needs which followed its official abo-
lition; the apparently permanent existence of great urban slums. These
negative cases provide an illuminating comparison with the mass par-
ticipation and vigorous activity of the disaster recovery effort. Why,
for example, is Harlem not defined as a disaster, worthy of a mass
therapeutic response?

In presenting these propositions we have tried to go beyond
simply listing them, to tie them together in a kind of system model.
Most of the variables appear not just in one but in several propositions.
Some of their relationships counterbalance others; some reinforce
others; and some feed back to grow upon themselves in snowballing
processes.

The model could have been made considerably more complicated than it is by adding more variables; we have tried to include only the main factors involved in the community response to widespread suffering. It should be emphasized that each particular proposition represents a tendency, which may be balanced or reversed by the action of other relationships in the model. The possibility of such reversals and other indirect consequences is exactly what this type of system model is supposed to point out.

The propositions are, needless to say, not all scientifically proven. Some are supported by observation in many cases; a few by statistical data from one or two communities; some are based on scanty impressions, but are included because they are thought to play an important part in the whole process of community response to suffering. It is particularly important to note their cultural and historical limitations: they have been derived from analysis of situations mainly within the United States, mainly within the last thirty years. We have tried to indicate some of the social and cultural conditions under which they hold, but many more such conditions need to be stated before the propositions can be thought of as applying to human societies in general.

Factors Influencing Communication and Knowledge about Victims' Losses
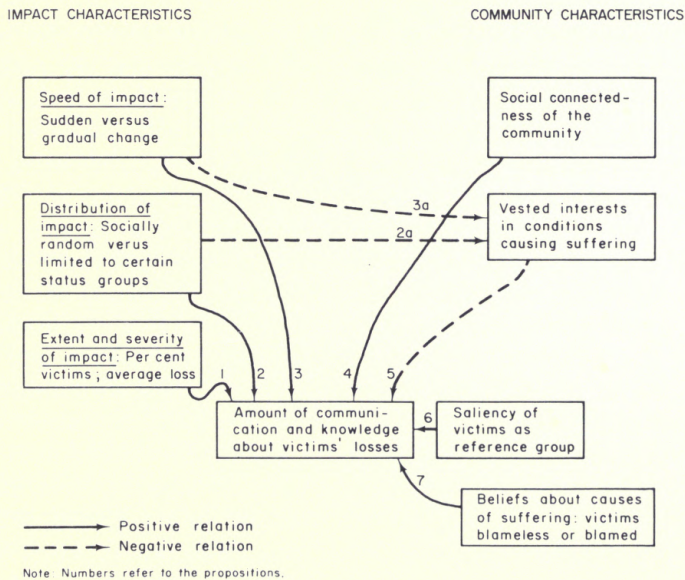

Figure 4-1. Factors Influencing Communication and Knowledge

1. The higher the proportion of victims and the average loss, the more communication and knowledge there will be about the losses suffered by the victims.

This is an example of a relationship in which individuals respond to their social context. The bigger the disaster, the more interested people will be in hearing about it, either through curiosity about an unusual and dramatic event, or through direct concern with the victims. This interest encourages information-seeking discussion, and rewards those who have information to contribute. It also stimulates the commercial news media to treat the situation as news (Moore, 1958, Ch. 10). The problem of what news people are interested in has been studied by journalists; there is an enormous amount of data on reader interests which is badly in need of careful sociological and psychological analysis. The content of the news media is an integral characteristic of the community which can be studied by quantitative methods, and related to the scope and severity of losses.

Interest of people within the community is perhaps more closely related to the proportion of victims than to their absolute numbers, since this determines the proportion of people who have some direct tie to those affected. Interest of people in more remote places may be more related to the absolute number of victims. Empirical inquiry might establish a law of this sort: the size of the headline and number of words devoted to the story is directly proportional to the number killed and inversely proportional to their distance from the audience.

At very high rates of loss, communications within the area may reach a limit and even fall off—if too many people are incapacitated or immobilized the informal communications nets cannot function, and the mass media may be knocked out. The reversal is due to the operation of a simple additive relationship; the more people suffer severe losses, the fewer people are in a position to communicate. This relationship counteracts the additive-contextual relationship between number of victims and public interest, but it does not have much effect when the proportion of victims is very small. When the severely injured or physically immobilized approach 50 per cent, however, it may overcome the effect of increasing interest, which in any case reaches a ceiling at a much lower proportion. This apparently happened in Hiroshima, where 30 per cent were killed and another 30 per cent severely injured (Janis, 1951, 20), and in the Holland floods, in communities where most of the people were isolated in buildings surrounded by deep water. The ultimate was the destruction of St. Pierre by a volcanic eruption; after which only one man out of 40,000 people was left alive (Downey, 1938, Ch. VI). Outside the area, of course, this event was the subject of much conversation and news coverage.

2. The more socially random the impact, the more communications and knowledge about the suffering there will be in the community.

An impact which hits people of all classes and social categories will activate more communications links than one limited to certain status-groups, even where the actual numbers of victims are the same in both cases. The socially stratified impact may create intense communication within the group hit, but there may be few channels linking to other status-groups in the community along with the news can disperse generally. A typical example is major unemployment among semi-skilled workers, which may go almost unnoticed by middle class members of the community unless dramatized by demonstration. This is especially true when the social connectedness of the community is poorly developed, as in large urban, new, or highly stratified communities. A blow at a part of such a community may not stimulate awareness in the other parts. A blow which strikes some members of all social groups, however, might create a much more widespread awareness even though no more people were involved, by activating all the informal communications networks of the various ethnic and social segments.

3. The more sudden the change for the worse, the more communications and knowledge about it there will be.

Dramatic suddenness is apparently an important determinant of public interest in physical disasters as compared with situations of slow deterioration or chronic suffering. The poor, the mentally ill, the accident victims, the prisoners, and the sick are always with us; we adjust our expectations to their existence. The sudden creation of large-scale suffering attracts attention, and requires either a major adaptation to make it acceptable as normal or a sequence of processes to eliminate it.

The news media can, of course, dramatize and bring to public attention a creeping trend or a chronic situation which has been socially forgotten, and thereby create a situation of public excitement about it rather like that created by a sudden disaster. This phenomenon has been studied in connection with the televised Kefauver crime hearings, for example (Wiebe, 1952). Such crusades often pass over without permanent effects; in other cases, however, they produce lasting institutional reforms. The factors which account for these differences are probably related to those included in the present scheme of disaster responses.

4.   The greater the social connectedness of the community, the more communication and knowledge about the suffering there will be.

The awkward term "social connectedness" is used here in place of the term "social integration" because of the multiple meanings and normative connotations of the latter (Landecker, 1951). It refers to the number of social ties of various kinds—friendship, advice-giving, information-exchanging, meeting in connection with job or office, kinship ties. A community with many social connections will spread more news faster than one which is composed of relatively isolated families, or of separate cliques or social classes. The disasters studied most intensively—the Arkansas tornado, the Louisiana hurricane, the Dutch floods—have occurred in small towns and rural communities. Informal, individual transmission of news flourishes in these settings. We know much less about disaster communications in larger towns and cities and in new suburban communities. It may be, as Prince, Fritz, and others suggest, that when impact reaches a certain extent and severity, normal social distance and social relationships become irrelevant and the community functions as one big primary group. This would tend to make pre-existing differences in social connectedness irrelevant.

Social connectedness is a good example of a relational-pattern characteristic of a community which strongly influences rates of individual behavior.

5.   The greater the vested interests in conditions causing suffering, the less communication and knowledge there will be about the suffering.

Certain kinds of suffering provide advantages for other groups within the society; others would require for their elimination the imposition of expense and difficulty upon the non-sufferers. To eliminate the extreme poverty and lack of opportunity of migratory farm workers would cost the farmers money in higher wages. To end the miserable living conditions in urban slums would cost the slum-owners and the taxpayers money. Therefore the advantaged groups generally attempt to discourage communication about the situation of such depressed groups to the general public.

The advantaged groups rather than the disadvantaged or neutral groups generally have great influence on the communications media in most communities and societies (Breed, 1952). The effects of this have been noted in studies of economically distressed cities, where the news media owners, closely connected with other business interests,

systematically suppressed news of the extent of suffering in the economic crisis and tried to show prosperity just around the corner (Lynd & Lynd, 1937, Ch. 10). This situation appears in extreme form in totalitarian societies where the state controls all forms of public expression. Mass starvation in rural areas of the U.S.S.R. during the collectivization drive went unmentioned in the press, and the Nazi press of course never mentioned the slaughter of millions of Jews by the German government.

Communications about a physical disaster are likely to be freer from newsroom taboos than communications about economic or social problems causing large-scale suffering. This arises from the extra-social causation of most physical disasters, and from their socially random impact.

The presence of news media which are politically and economically independent of any particular interest groups, professionally dedicated to reporting all the news, and capable of attracting a large audience, could largely eliminate the relationship embodied in this proposition. Such organizations however are not present in most American communities, and where they exist tend to reach minority audiences of intellectuals or committed liberals rather than a mass audience.

> 6. The greater the saliency of the sufferers as an identification or reference group, the more communication and knowledge about the suffering there will be.

An identification group is one of which we feel ourselves to be members, with accompanying feelings of loyalty and concern toward other members. A reference group is a group to which we pay attention in evaluating our own situation, a group used as a standard of comparison. We are more concerned with what happens to our friends, or people like ourselves, or people whom we value and respect than with what happens to just anybody. To the extent that the sufferers include people with whom many others in the community identify, or toward whom many others look for comparison, they will be more salient; and people will be more motivated to seek news about their plight, to talk about their problems, and to pay attention to the situation.

> 7. Beliefs about the causes of suffering influence the amount of communication about it.

Where the victims are blameless there is more communication, in part because they themselves are less likely to conceal their problem.

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During recent recessions, there were reports of widespread conceal-
ment of unemployment by the victims, especially in suburban areas,
out of feelings of shame. Alcoholism, mental illness, and illegitimacy
are obvious examples of chronic individual and family suffering which
are stigmatized and therefore concealed; even certain physical illnesses
—notably cancer—were for a long time virtually unmentionable.

When blame might fall on influential social groups, the phenom-
enon of news suppression in the mass media, described above, will
also be more likely to occur.

Factors Influencing the Saliency of Victims as a Reference or Identification Group

IMPACT CHARACTERISTICS   COMMUNITY CHARACTERISTICS

Speed of impact:
Sudden versus
gradual change

Distribution of impact:
Socially random versus
limited to certain
status groups

Extent and severity
of impact: Per cent
victims; average loss

Amount of communica-
tion and knowledge
about victims' losses

Social
connectedness

Saliency of victims
as reference or
identification group

Positive relation
Negative relation
Note: Numbers refer to the propositions.

Figure 4-2. Factors Influencing Saliency of Victims

8. When informal social connections are strong within
    a population, the sufferers are more likely to be
    salient as a reference or identification group.

People are more likely to compare themselves with and identify
with victims they know personally, or hear about through personal
contacts. Small, close-knit communities may therefore respond
differently to disaster than larger, newer, or more stratified commu-
nities in matters dependent on reference group processes or emotional
identification with victims. The extreme case where social isolation
and consequent failure to identify with sufferers is almost complete

occurs where the sufferers are outsiders temporarily resident in the territory of a community—migrant workers, displaced persons, slave laborers, etc. A highly stratified community can tolerate a large amount of suffering among the lowest stratum without their becoming salient as a reference or identification group. The slaves, peasants, etc. are often defined as literally sub-human by their masters and lords.

    9.   When the impact is sudden, the sufferers are more likely to be salient as a reference or identification group.

When there are sudden losses, the status quo ante forms a highly visible standard by which present conditions can be judged. Sympathy for victims, and feelings of being relatively well-off, will be based on this vivid contrast between before and after. Slow change permits expectations to adjust to realities, both on the part of the sufferers and the potential sympathizers; the victims may get used to it, and the rest of the population in any case may assume that they are used to it. Slow change also permits disidentification to operate—the image of the victim changes, belief in his blamelessness erodes, and he ends up stereotyped as worthless or having lower standards of needs than nonvictims. These processes appear in Lynd's description of attitudes toward the unemployed in Middletown, and they are well known from studies of white attitudes toward Negroes.

   10.   Social randomness of impact makes for greater saliency of the sufferers as a reference group and identification group.

It has been suggested that disaster tends to destratify the community, making prior social status and relationships less relevant than the present community of fate. However this is likely to happen only if the impact itself is random in relation to social categories. If there are victims of all social types, everyone can find someone to identify with or compare himself with among them. Further, the similarity of problems and emotions of people of all classes in physical disaster emphasizes the common characteristics of all men and deemphasizes their differences, for the time being. Therefore all sufferers may become objects of concern for community members. Davis (1959) gives a useful formal analysis of the effect of social randomness in his "Formal Interpretation of the Theory of Relative Deprivation."

Children are particularly salient as victims because they are more "classless" than adults and are almost by definition "innocent" of blame for their suffering; moreover, everyone has once been a

child himself and has some empathy with them, while not everyone has been poor, or Negro, or unemployed.

    11.   The greater the amount of communication about the losses suffered by the victims, the more salient they will be as a reference or identification group.

Where the victims are already salient due to past ties, there will be more information-seeking and more response to communications about them, according to proposition 6. Here we have the converse relationship: a large amount of communication about the victims makes them more salient. People are more likely to compare themselves with the victims and to identify with them if they hear a lot about them. These two relationships can build up public concern with the victims in an inflationary spiral, at least up to some saturation point.

Furthermore, the tendency of public interest and communications to focus on the most extreme sufferers tends to fix them as a reference group against which even other sufferers can favorably compare themselves. The mass appeal of the human interest story induces the news media and the informal communications channels to publicize the most pathetic cases. This has the effect to inducing people to compare themselves with the few who suffered most, rather than with the average community member or with the pre-disaster state of things; and indeed this effect may be what is sought after by people in demanding and exposing themselves to such human interest stories.

    12.   Once some saturation point relative to the resources of the population is reached, an increase in the number of victims may reduce the saliency of the sufferers as an identification group.

This relationship tends to counteract the effects of proposition 1 at a certain degree of disaster. It is a possible limiting factor on concern with the sufferers when the disaster gets too big for people to do anything about it. During a major famine, for instance, families and communities which are not starving cannot easily share their food with the victims lest they too starve. In the conditions of choice imposed by this degree of scarcity of resources relative to human needs, primary group loyalties outweigh humanitarian identification with sufferers generally. The result would probably be a tendency to withdraw identification from the masses of sufferers who cannot be helped, or who can only be helped at great sacrifice of personal and group values. This history of the Irish famine provides evidence for this (Edwards & Williams, 1957) as does the behavior of small Western United States communities, overwhelmed by large numbers of destitute

migrants during the Great Depression (Collins, 1941, Ch. 13). The use of "settlement laws" to deny responsibility for relief to non-residents formalized the denial of identification with these suffering people (McWilliams, 1944, Ch. 16). This disidentification with excessively large numbers of sufferers undoubtedly plays a large part in the attitude of residents of wealthier countries to mass poverty in overpopulated, underdeveloped regions.

In the case of community disasters this proposition is a clear example of an additive-contextual relationship. Up to a point we could expect that the more victims there were, the larger the proportion of the population which would identify with them. At some point, however, people stop responding to the individual victims with whom they come in contact and respond to the total number of such victims in the community. At this point, fear, a feeling of helplessness, or hostility may be the reaction to the hordes of sufferers seen in the aggregate.

A study of a hurricane-struck island in the Pacific by Spillius (1957) reports the loss of social solidarity in an extreme situation. The storm caused loss of food supplies, and many families took to stealing from others' stores out of fear of starvation. Normal social controls broke down; drastic punitive measures were about to be enacted, with what effect no one could say. Only outside help provided a way out of the situation. Similar breakdowns took place in the Irish potato famine of 1845-49 (Edwards & Williams, 1957).

In both of these cases the apparent absence of any workable collective solution to a problem threatening the very life of the family resulted in amoral familistic behavior contrary to community welfare.

Factors Influencing Beliefs about Causes
of the Victims' Suffering

    13. Social randomness of impact influences beliefs
        about the causes of suffering.

It is harder to stereotype the sufferers if they come from all social categories and include some of one's own friends and relatives. Large-scale suffering limited to the working class, or an ethnic minority, or a particular neighborhood, is more easily related to prior stereotypes so that the victims can be blamed, wholly or partly, for the impact itself or for failure to cope with it adequately. The impact of natural disaster is more likely to cut across social categories than most other forms of large-scale suffering. Wars of the recent past, with their universal military service and their indiscriminate
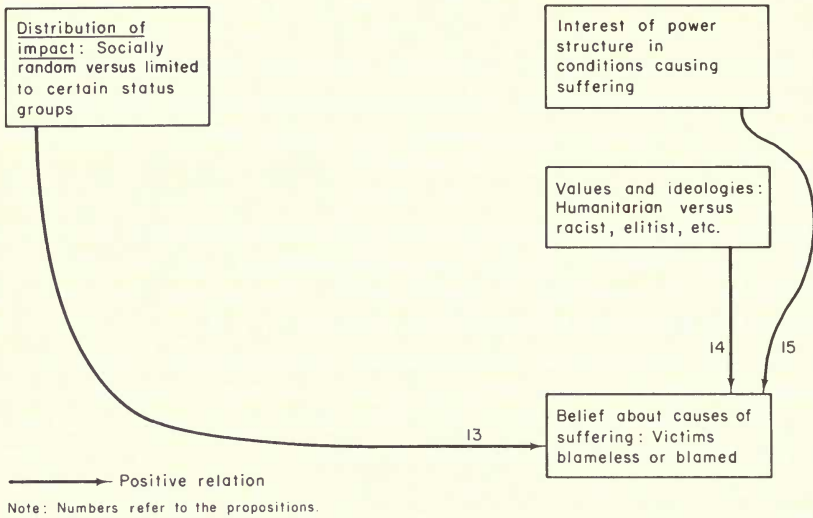
Figure 4-3. Factors Influencing Beliefs about Causes
    of Suffering

bombings of civilians have also tended to strike all classes of people.
One need only contrast the acceptance of the draft in the last two world
wars with the Civil War draft riots when exemption could be purchased.
Economic or racial discrimination in the provision of shelter from
hydrogen bombing and fallout could recreate such a situation.

14. Ideologies and values influence beliefs about the
     causes of suffering.

    This is an obvious relationship which is simply additive from
the individual level; but it is an important point in the operation of the
restorative social system. Passive acceptance of suffering is pro-
moted by religions which emphasize sin and supernatural punishment.
In the Lisbon earthquake in the late 18th century the local Catholic
prelates were so concerned with sin and expiation that they came into
serious conflict with the government which was trying to raise morale
and meet worldly needs (Kendrick, 1957). Traces of this supernatu-
ralist ideology appeared among Calvinist sectarians in the 1953 Holland
flood; in the Arkansas tornado of the same year, fundamentalist
preachers are described as specifically denying that the suffering was
a form of divine punishment.

    Traditional stratified societies have long permitted periodic
starvation of the poor in order to secure the elite stratum from losses
in time of famine. (And in Scrooge's words, to "reduce the surplus
population.") The restraint of sharing with community members who

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were in desperate need had to be justified; the factual and evaluative assumptions which did this were usually those which supported the stratification system in normal times. The elite were said to be morally superior, blessed with supernatural powers, endowed with greater productive abilities, or indispensable to the national purpose. The suffering mass was conversely said to be immoral, subject to divine punishment, unproductive, and socially expendable.

Economic ideologies which emphasize individual responsibility also focus blame on the victims of economic difficulties and crises. In its extreme form the individualist ideology becomes Social Darwinism, as advocated by Spencer, Sumner, and the intellectual and business leaders of late 19th century England and America (Hofstadter, 1955). The poor and the unemployed were simply "unfit," lacking in intellectual, moral, or physical abilities needed for survival.

Wrote Spencer:

> "If they are sufficiently complete to live, they do live, and it is well that they should live. If they are not sufficiently complete to live, they die, and it is best they should die" (Quoted by Hofstadter, 1955, p. 41).

And Sumner wrote:

> ". . . Distress and misery still remain on earth and promise to remain as long as the vices of human nature remain" (Quoted by Hofstadter, 1955, p. 57).

The poor were generally

> "negligent, shiftless, inefficient, silly, and imprudent" (Quoted by Hofstadter, 1955, p. 10).

These beliefs were still prevalent in "Middletown" in the 1930's as described by Lynd (1937).

15. The interests of the controllers of the mass communications and the influential leaders influence beliefs about the causes of suffering.

News media, schools, etc. are often controlled by a dominant social group which tries to direct blame for suffering away from itself and onto the victims, or onto foreign or domestic outgroups. Social Darwinism flourished in the press and schools during the period of unchallenged business control; anti-Semitic myths served to protect

German big business from public attack during the depression; the mythology of capitalist and Trotskyist "wreckers" was used to support the Stalinist regime amid the mass suffering of the first five-year plans.

Public understanding of complex social problems, like unemployment, mental illness, and crime, is also hampered by the tendency of audiences to prefer, and the commercial mass media to offer, only sensationalized descriptions of the situation which do not advance understanding of it. The creation of carefully worked out programs of public education concerning such problems which will appeal to the public's interest sufficiently to secure a mass audience is difficult and time-consuming. It is easier to educate the already educated, and to give the masses what they want.

Both of these obstacles are minimized in natural disasters. It is not necessary to understand their causes in any technical sense to know what to do to mitigate the suffering, and it is unlikely that vested interests will feel it necessary to blame the victims when the causes of suffering are safely extra-social. Of course, when it comes to the prevention of certain types of disaster, such as floods, famines, or epidemics, the role of social factors and economic interests becomes a major block to public understanding.
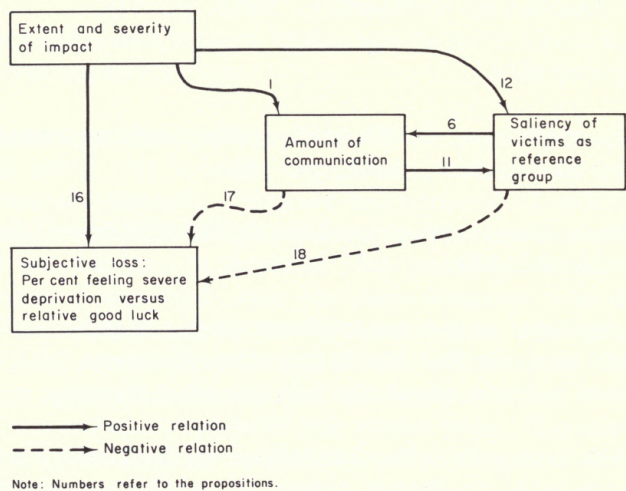
Factors Influencing Feelings of Deprivation

Figure 4-4. Factors Influencing Deprivation Feelings

16. The greater the proportion of victims, and the
    greater the average loss, the higher the proportion
    who feel severely deprived.

This is an obvious relationship, additive from the individual
response. However, it may be counterbalanced in some situations
by the other effects discussed below.

17. The more communication and knowledge there is
    about the losses suffered by community members,
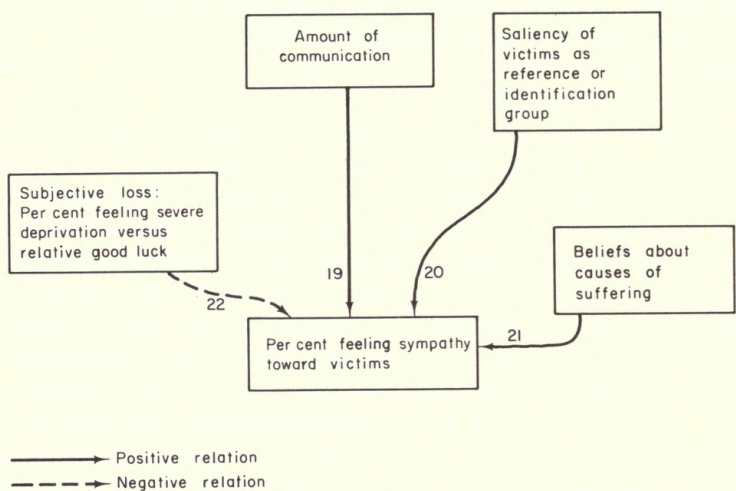   the smaller the proportion who will feel severely
    deprived.

This is part of the pattern of relative deprivation: Knowing how
others have suffered makes people feel less deprived, and even lucky.
There is much evidence for this in other fields. (Wolfenstein, 1957,
pp. 181-188; Merton, 1957, 225-280; Stouffer, 1949, pp. 125-127).
The results of the NORC Arkansas study strongly indicate its occur-
rence in disasters (see Chapter 2, this volume). This appears to be
a key mechanism for eliciting a supportive community response to
disaster even when the proportion of victims is very high; for the
more victims, the more everyone is aware of the generality of suffer-
ing and of its severity for the families which were hit hardest. This
is an instance in which people's perception of the community situation
influences their response in such a way as to counteract the direct
effect of the situation upon them.

18. The greater the saliency of the sufferers as a
    comparative reference group, the smaller the
    percentage who will feel severely deprived.

This is a condition which must be met for the previous relation-
ship to operate: people must feel that the sufferers are a relevant
group with which to compare themselves. Americans do not typically
compare themselves with starving peasants in Asia, in spite of the
old appeal to children at supper to "clear up your plate—think how
much the starving Chinese would like to eat what you're leaving."
White Southerners do not generally compare their lot with the local
Negroes when taking stock of how well off they are. There must be
some social basis for selecting a group for purposes of comparison
with one's own fate—proximity, similarity, prior social relationship,
or other factors. The ecological, social, and psychological factors
influencing the choice of comparative reference groups need to be
much more carefully studied. It is, for instance, quite unknown how
far the feeling of being lucky extends from the immediate disaster
area, and whether it falls off faster or slower than the actual experience

of damage. If faster, we might find a ring of lightly damaged but subjectively deprived people around the "altruistic" impact area. Some of the NORC data suggest this pattern (see Chapter 2, this volume).

Factors Influencing the Proportion of Community Members Feeling Sympathy toward Victims

Figure 4-5. Factors Influencing Proportion Feeling Sympathy

19. The more communication and knowledge there is about the losses suffered by the victims, the more people will feel sympathetic toward them.

20. The greater the saliency of the sufferers as an identification group, the more people will feel sympathetic toward them.

The first of these two propositions is simply additive from the individual relationship of knowledge to attitudes. The second is in part a condition for the operation of the first; some degree of identification with the victims must be present if hearing about them is to make us sympathize. The execution of a mass murderer is likely to be greeted with pleasure by many people, as is the jailing of a racketeer or an advocate of repugnant beliefs. Bombing of enemy populations does not seem to bother many people in wartime, although they become

quite emotional over civilian victims on their own side. This is part of the mechanism by which hostility rather than altruistic sympathy is generated when mass suffering is the result of social conflict (Janis, 1951, Ch. 7). The positive operation of group identification is seen when members of a particular occupation, ethnic group, or fraternal group extend aid to members of the same group in a disaster, even in far-away places.

    21.   Beliefs about the causes of the suffering influence the degree of sympathy with the victims.

This relationship carries the influence of ideologies and values one step further. When the victims are blamed for their own suffering, there is generally less sympathy for them. This is also a simple additive form of an individual-level relationship; we do not have as much sympathy for the willfully negligent accident victim or for the lazy unemployed person. Its operation on a mass scale can be seen in the ideology of Social Darwinism which was extremely popular among the middle and upper classes in late 19th century capitalist societies. The Social Darwinists believed in the inevitability of suffering, and "seemed to contemplate human misery with callousness and with an excessively dogmatic certainty that nothing could be done about it" (Hofstadter, 1955, pp. 41, 54). Wrote Spencer of the poor:

> The whole effort of nature is to get rid of such, to clear the world of them, and make room for better.

And Sumner's version of the Golden Rule was "Root, hog, or die." A recent study of social attitudes by Nettler (1957) finds that a free will ideology is relatived to punitiveness toward others, and a study of the concern with justice of law students suggests that those who make social and psychological interpretations of the causes of unjust behavior are more justice-oriented than those who give moralistic explanations (Barton & Mendlovitz, 1960).

    22.   The more people who feel severely deprived, the fewer will feel sympathy toward other victims; conversely, the more people who feel relatively better off than others, the more will feel sympathy for the victims.

An obvious relationship is that those who feel hard-hit themselves will be concerned mainly with their own problems, and not concern themselves with the suffering of others. The more people in the community feel severely deprived, the fewer there are to worry about others. However, as we have seen, the relative-deprivation mechanism

tends to prevent people in the disaster area from feeling severely deprived by making them feel relatively lucky and well-off. It detaches subjective from objective deprivation. (Wolfenstein, 1957, pp. 55-56, 177). To the extent that feelings of being relatively better-off increase in proportion to the severity of the impact, this relationship serves to increase rather than decrease the numbers feeling sympathy for victims, even among the victims themselves, in situations where such sympathy is most needed.

Factors Influencing Opportunities to Help Victims
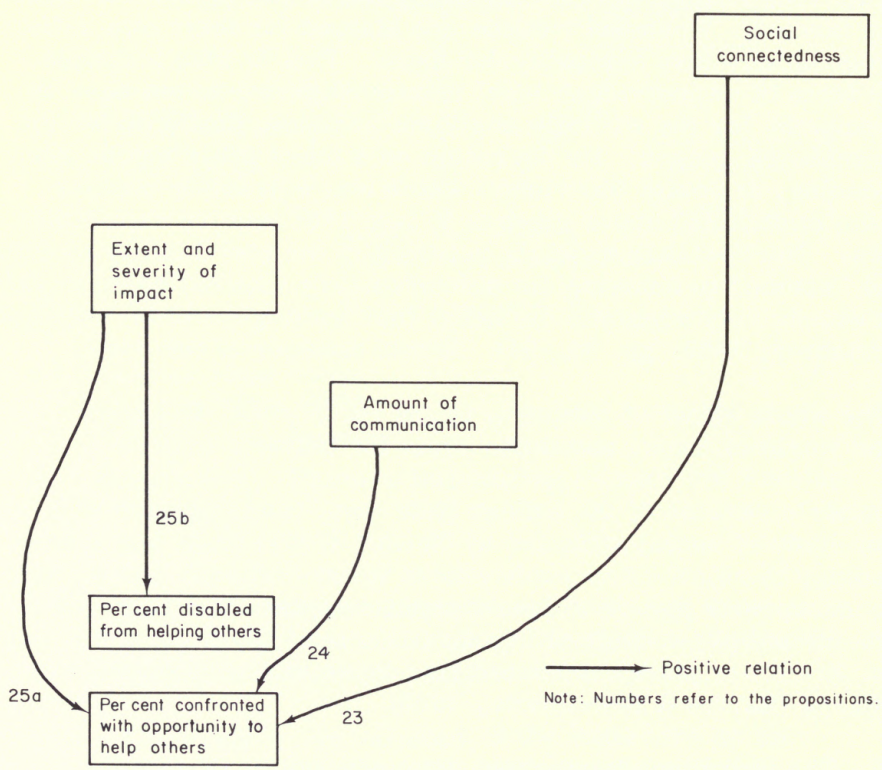
Figure 4-6. Factors Relating to Helping Victims

23. The greater the informal social connectedness of the community, the higher will be the percentage of members with opportunities to help victims.

In a close-knit community there will be more pre-established social relationships along which help can flow; in a community of relatively isolated families many may not know how to get in touch

with people in need of help. However, to the extent that pre-existing
social distance is eliminated and all members become "brothers"
this community background factor will lose importance.

24.   The more the communication and knowledge about
        losses suffered by community members, the higher
        will be the percentage of members with opportunities
        to help victims.

This relationship indicates one consequence of the reduction in
social distance and dependence on pre-established social relationships
in major disasters. With conversation about the disaster and the
problems of individual victims unrestrained and strongly motivated,
it is possible for many more people to find ways of helping. They will
learn about the needs of their neighbors and of strangers with whom
they normally have no intimate contact or no contact at all.

25a.   The greater the proportion of community members
          who are victims, the greater the proportion who
          are incapacitated from helping others.

25b.   The greater the proportion of community members
          who are victims, the greater the proportion of
          those not incapacitated who will have opportunities
          to help others.

These two relationships are the two aspects of the effect of rate
of casualties: its simple additive effect, and its effect as a context
for those not themselves casualties. When few people are hurt by a
disaster, most people simply do not have any direct opportunity to
help. As the numbers of casualties rise (especially if they are widely
scattered) many more people have such opportunities. At some level
of casualties, of course, the number of helpers reaches a ceiling;
beyond this level, more people are withdrawn from the labor force of
helpers by direct effect of casualties than are added to it by provision
of more opportunities. This point is necessarily reached when 50 per
cent of the population are casualties, in the sense of being incapacitated
from helping others; it is probably reached long before the 50 per cent
mark, since every severe casualty tends to require several helpers;
the ceiling rate of helping may be achieved with only 30 per cent, 20
per cent or even fewer casualties. The destruction of Hiroshima,
where 30 per cent were killed outright and another 30 per cent severely
injured, provides an example of an overload on the community helping
system; the 40 per cent who were not seriously injured could not meet
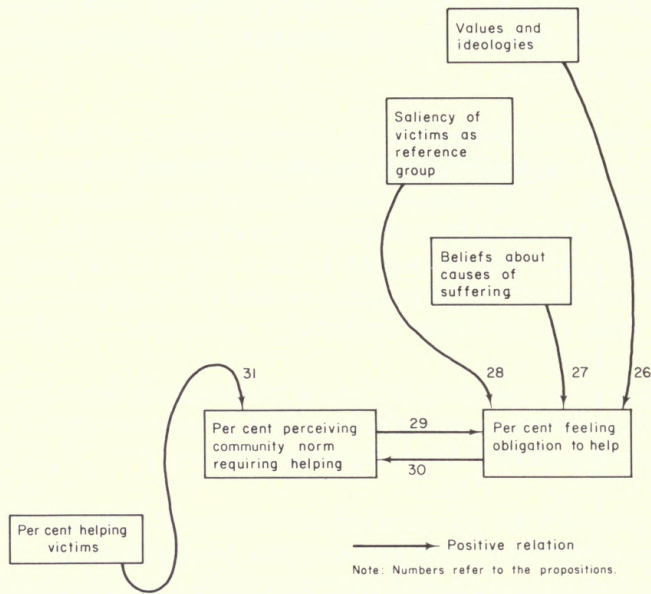many of the needs of the victims for rescue, medical aid, food, shelter,
etc.

Figure 4-7. Factors in Feeling Obligation to Help

26. Ideologies and values influence the proportion who
    hold a normative standard requiring the giving of
    help to the victims.

Aristocratic, racist, and Social Darwinist norms typically deny
an obligation to prevent suffering and death among human beings. A
study of a southern Italian village describes a community in which few
would even contribute to help the orphans, because of an ideology of
"amoral familism" which denied all obligations to people outside the
immediate family (Banfield, 1958). On the other hand, some religious
and secular ideologies emphasize the positive duty to give charity or
to so distribute resources as to provide the greatest satisfaction to
the greatest number.

Normative standards of permitted and forbidden forms of help
are also very influential. A striking example of the conflict between
ideological fears of destroying individual responsibility and the market
system, on the one hand, and the desire to avoid mass starvation on

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the other, was presented by the response of the Liberal government of Great Britain to the Irish famine in the 1840's (Edwards & Williams, 1957).

A more recent example of this conflict is to be found in the Great Depression of the 1930's in the United States. Lynd's Middletown in Transition is a case-study of a community vacillating between 19th-century liberal acceptance of mass suffering and modern liberal humanitarianism:

> When the squall hit in 1929, it is quite characteristic of these generous folk that nobody doubted the social duty to "lend a hand," for "we can't let Americans starve" (1937, p. 104).

On the other hand there were strongly held beliefs, at least at the beginning of the depression, that "any able-bodied man can get himself a job," so that unemployment was the victim's own fault. The traditional charitable fund-raising by the wealthy and the middle-classes, the giving of old clothes, seeds and small plots of land, places to sleep on the floor of the Courthouse basement, free bowls of soup, plus the payment of small sums from the township treasury to destitute families, were the only means which the community leaders could imagine for dealing with the problem. They proved totally inadequate.

> . . . Charity agencies were being drowned under the flood of requests. . . Public funds for relief began to run wild as demands, of a magnitude never anticipated when legal controls on the modest office of the township trustee had been established seventy-five years before, began to be met from taxes (p. 106).

> Relief payments were being slowly whittled down as the burden of relief mounted. From two dollars a week for two persons they were cut to one dollar for the first family member and fifty cents for each additional person. In the spring of 1935. . .the rate for the first person was cut to eighty-five cents, for the second to fifty cents, for the third to forty-five, for the fourth thirty-five, and for all additional persons thirty cents each (p. 111).

Faced by all this need, the local community upper class would not undertake a drastic sharing of existing incomes, and the only way it knew of organizing the use of resources was in terms of a profit-making, market economy. Large classes in the community could not even understand the existence of the problem of unemployment:

The farmers of the county, with their strong tradition
of fending for themselves and their habit of seeing in
"taxes" the major dragon in the path of the farmer,
could make no sense of the way public tax funds were
being squandered to carry the unthrifty city population.
These farmers and their neighbors were not asking the
world to support them and the relief claims in their
own townships were low (p. 109).

Between the pressure of unprecedented need and the resistance
of traditional ideologies and beliefs, the humanitarian sentiment began
to erode.

The same editor who voiced Middletown's genial mood
of charity in 1930 by saying that "Looking after people
who are out of work is sort of your job and mine," said
in 1936 of those "worthless" local people who "would
not work if they had jobs": ". . . if some plague were
to come along. . . and wipe them all out, that would
not be a tragedy but a big relief" (p. 142).

Only the advent of massive Federal relief programs prevented tragic
social conflict.

Lynd concludes from his observations:

A summary view of Middletown's care of the unable in
the depression years suggests that Middletown is living
simultaneously in two different worlds as regards this
problem. It lives in an immediate world in which it
must tolerate an unprecedented volume of relief from
public funds. But it distrusts this whole process of
public relief because of the chronic corruption in local
politics; and it cannot take a matter-of-fact attitude
toward the continuance of such public aid because of the
heavy emotional weighting of its postulates regarding
individual self-help on which its institutional system so
largely rests (p. 139).

Another instance of the effect of ideology which attracted wide
attention at the time was the willingness of the Hoover administration
to feed hungry cattle, while they refused to feed hungry farmers during
the drought and depression of 1931. The Secretary of Agriculture felt
that it was a matter of principle; feeding people was the job of the
charitable organizations like the American Red Cross, not of the
Federal government (Schlesinger, 1957, 170; Hopkins, 1936, pp. 32-34).

27. Beliefs about the causes of suffering influence the proportion who hold a normative standard requiring giving help to the victims.

Just as sympathy is influenced by perceptions of the guilt or innocence of sufferers, so are normative standards calling for giving them help. Where victims are blamed for their own suffering, the obligation to help them is generally denied; responsibility for improving their situation is laid upon the sufferers. In contrast, a general belief in social determinism tends to be associated with acceptance of a social obligation to help the poor, the maladjusted, and the criminal. Disaster victims are usually considered innocent victims.

28. The greater the proportion who identify with the sufferers, the greater the proportion who will hold a normative standard requiring that they be given help.

This is an obvious additive form of the individual relationship which says that identification involves normative standards of mutual support. Identification as a member of a class, a nationality, an ethnic group, a family, a community, or the human race in general, normally involves acceptance of responsibilities toward other members of these groups.

29. The greater the proportion who perceive "helping the victims" as a community norm, the more people will hold such a normative standard themselves.

This reflects the fact that people internalize the norms which they perceive as existing in their social context. It forms an important link in a mutual reinforcement process by which norms are created.

Factors Influencing the Proportion who Perceive "Helping the Victims" as a Community Norm (see Figure 4-7).

30. The greater the proportion who in fact hold a normative standard requiring help for the victims, the more people will perceive this as a community norm.

This converse of the previous relationship simply suggests that perceptions of the social context in some degree reflect the actual social context. There are of course cases in which "pluralistic igno-rance" is maintained, like the celebrated village in which the great

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majority favored card-playing and played cards, but <u>believed</u> that the majority was against it and did not (Schanck, 1932). We have little data on perceived relative to actual community norms in disaster.

31. The greater the proportion actually helping the victims, the more people will perceive this as a community norm.

This indicates that overt behavior, whatever its sources, may be understood as indicating a normative standard held by those who engage in it. This is another link in the interstimulation process by which norms are created. It is one specific way in which "imitation" is motivated.

Factors Influencing the Proportion of Community Members Who Help Victims
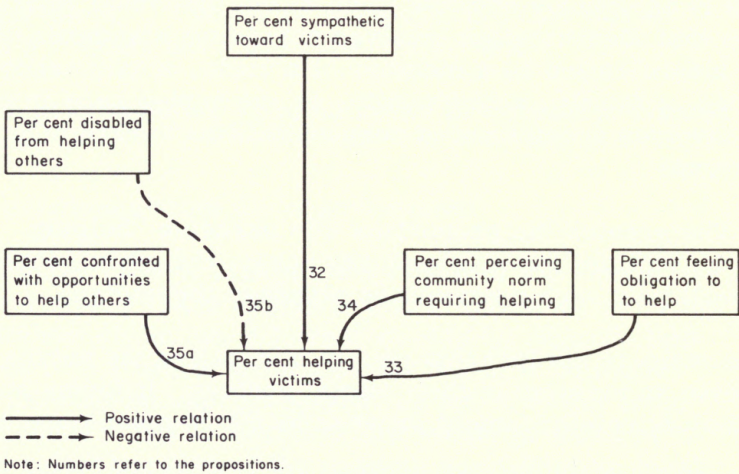

Figure 4-8. Factors Relating to Proportion Who Help

32. The greater the proportion sympathetic to the victims, the more people will actually help the victims.

This is the most simple form of additive relationship, in which the rate of individual behavior is attributed to the proportion who possess the appropriate individual attitude. It is this personal, emotional response which is said to dominate the earliest stage of the emergency social system when people are responding directly to what they first see immediately around them after the impact. Our analysis here is designed to show the other, sociological factors which condition this

direct psychological relationship: the opportunity structure (Proposition 35), internalized social norms (33), perceived external social pressures (34), and behind these the mechanisms which disseminate knowledge, influence identification with victims, and create feelings of relative advantage or deprivation.

33. The greater the proportion holding a normative standard requiring helping the victims, the more people will actually help the victims.

This expresses the fact that people are moved not only by individualistic emotional responses, but by feelings of moral obligation which may reinforce or substitute for personal emotions in motivating action in conformity with norms. The proportion holding such a normative standard may be a prior characteristic of the community which remains unchanged throughout the disaster sequence. This is most likely to happen for types of impact which occur frequently in the community, for which norms are well developed. Mining communities have such norms ready for a disaster. Where the impact is not a familiar experience, the initial response may arise largely out of individual sympathies, and the normative standard may evolve through the social processes described above, only gradually attaining an important influence on behavior.

34. The greater the proportion perceiving "helping the victims" as a community norm, the more people will actually help the victims.

This expresses the fact that people may be motivated or reinforced in their behavior by a fear of social sanctions. People who do not sympathize strongly with the victims, and who do not have within themselves a sense of obligation to help them, may nevertheless help if they think that the community generally feels this behavior to be obligatory. Going against a community norm usually results in disapproval or other penalties; in this way the norm influences people who do not themselves hold it. Here at last we come to Prince's (1920) observation that "imitation is the foundation of custom. It became the thing to do. The thing to do is social pressure." In his case he reported the pressure to be "inexorable." The role of social pressures as distinct from personal attitudes appears in the well-known distinction between prejudice and discrimination (Merton, 1949).

35. The greater the proportion who have opportunities to help, the more people will actually help.

Failure to engage in helping behavior may be due to lack of opportunity rather than lack of motivation. In comparing rates of

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participation in the therapeutic social system, this factor must be kept in mind. Different types of impact and different community backgrounds may result in narrowing or widening the access to helping roles. The problems of floods have been mentioned; compared with tornadoes they physically immobilize much more of the population, and prevent the "cornucopia" of informal mass help from flowing. Any situation which restricts helping activities to those with special equipment and special skills creates a bottleneck in the relief of mass suffering; medical care is such a bottleneck in all kinds of disasters, as is rescue work in floods where few people own boats.

A striking example of the problem of access to means of effective action is presented by a study of listeners to the Kefauver crime hearings. These televised revelations aroused a large proportion of the public to want to do something; but they did not provide any workable suggestions for individual action. The result was that after a brief period public concern dies away (Wiebe, 1952; see also Merton, 1946). When dealing with a problem, whether of massive deviation from community norms or of mass suffering, requires difficult insights into the social structure and complex organizational skills, then mass participation is hard to get. If mass mobilization for action is to be obtained, it is up to those with special skills and knowledge to formulate intelligible versions of the facts and to construct organizations which give the public access to effective roles which are within their capacities. In the long run the most strategic factor is to provide the public with education and practice which will develop their understanding of social problems and their skills in taking either individual or organized action to deal with them. This applies as well to dealing with the problem of prevention and cure of large-scale disaster as it does to the problems of urban corruption, crime, mental illness, and depression.

Opportunities to act are not only a function of physical access to and information about the location of problem situations. In a wider sense they also depend on the individual's knowledge and skills for carrying out the required actions, and the provision of informed and skilled leadership to those who themselves lack these things. Problems of individual competence and organizational opportunities are discussed in Chapters 2 and 3; they could be fitted into the present scheme at a number of points. We will just mention a few significant examples from research.

A study of listeners to the Kefauver crime hearings revealed that most of them felt they had no opportunity to do anything about the situation. Many were motivated, but few knew what to do, so their concern died away (Wiebe, 1952). In contrast, Merton's (1946) <u>Mass Persuasion</u> describes a broadcast appeal to which the means of response were readily available—one had only to telephone in a pledge to buy a war bond, and many did.

Lipset (1950) studied the wheat farmers of Saskatchewan who created an effective mass political protest movement in response to economic stress. He found that the social structure of wheat farming involved small, relatively equal-sized farms scattered over large areas, so that the ordinary farmers had to fill a great many positions in local governments and cooperatives which elsewhere would have been handled by specialists or a local upper class. As a result of this veritable "Jeffersonian society," organizational skills were widely diffused in the population, and it was easy for them to respond to economic problems by mass organization.

For people who themselves lack skill and knowledge of what to do, the opportunity to act may be made available by organizations whose leaders have these advantages and can direct the unskilled volunteer. Such organizations may also try to give the public education and practice in coping with various problems, and develop their capacity to act on their own or as responsible participants. To the extent that social insight and skills are transferable from one situation to another such general civic training will be effective in a wide range of situations. To the extent that each problem is specialized (e. g., requiring advanced knowledge of firefighting, medicine, psychiatry, economics, radioactivity, etc.), professional leadership may be required to play a greater role. The importance of spontaneous mass action as contrasted to authoritative professional leadership was and is a crucial issue among socialist revolutionaries; in Russia the Mensheviks stood for the former and the Bolsheviks for the latter. Subsequent events suggest the dangers of over-organizing people "for their own good."

Summary of Processes Making for the
Therapeutic Community Response

Figure 4-9 puts all these relationships together in one scheme. The output is the proportion of the population who help the victims. The inputs are the characteristics of the impact—speed, social distribution of impact, and severity—and the social characteristics of the community which it strikes—its social connectedness, the interests of its leaders and power groups, and the ideologies and values of its members. Between the inputs and the output are several complex mechanisms which have been described above. The communications processes are stimulated by the type of disaster either to maximize or minimize public awareness. In natural disasters they generally reinforce one another to produce a very high degree of public knowledge. The identification processes produce a high or low degree of identification with the victims depending on the type of impact and the
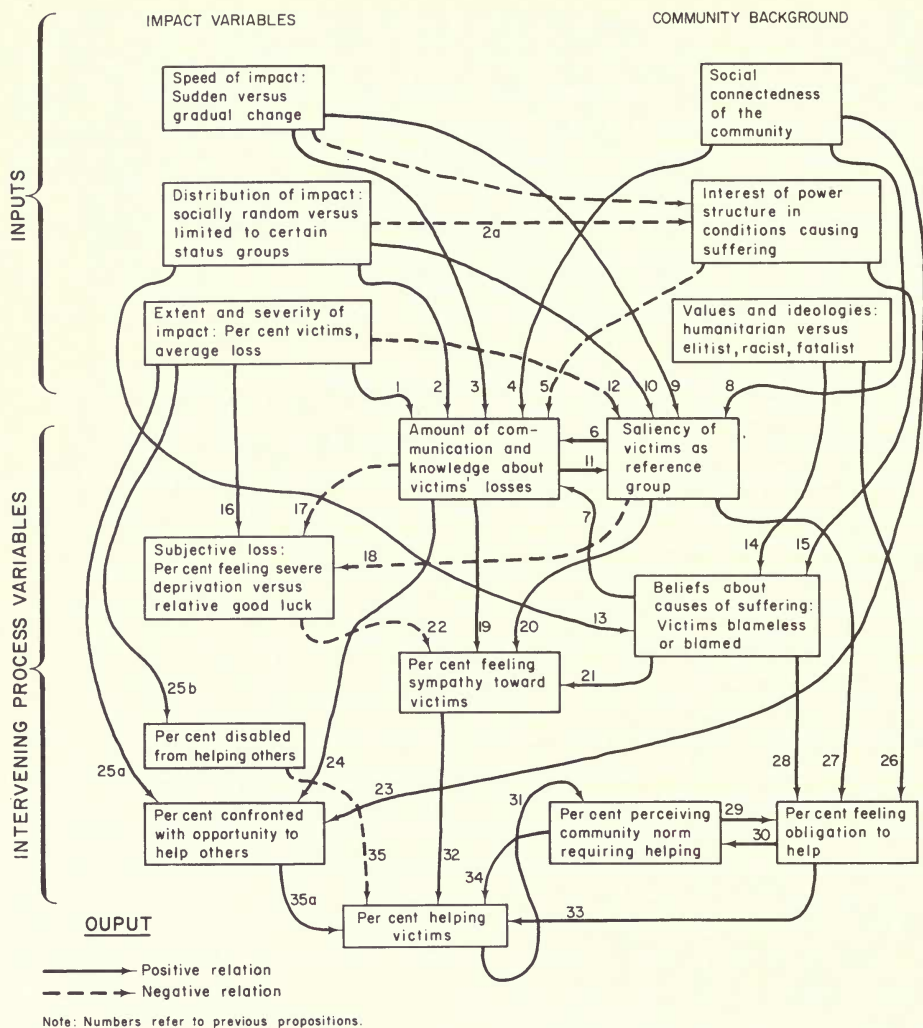
INPUTS

Speed of impact:
Sudden versus
gradual change

Social
connectedness
of the
community

Distribution of impact:
socially random versus
limited to certain
status groups

2a

Interest of power
structure in
conditions causing
suffering

Extent and severity of
impact: Per cent victims,
average loss

Values and ideologies:
humanitarian versus
elitist, racist, fatalist

INTERVENING PROCESS VARIABLES

1 2 3 4 5 12 10 9 8

Amount of com-
munication and
knowledge about
victims' losses

6

11

Saliency of
victims as
reference
group

16 17

Subjective loss:
Per cent feeling severe
deprivation versus
relative good luck

18

7

14 15

Beliefs about
causes of suffering:
Victims blameless
or blamed

22 19 20

13

Per cent feeling
sympathy toward
victims

21

25b

Per cent disabled
from helping others

24

25a

23

Per cent confronted
with opportunity to
help others

31

35 32

34

Per cent perceiving
community norm
requiring helping

29

30

28 27 26

Per cent feeling
obligation to
help

OUPUT

35a

Per cent helping
victims

33

Positive relation
Negative relation

Note: Numbers refer to previous propositions.

Figure 4-9. Process in Mass Community Response to Suffering

community background characteristics. The communications and the
identification processes mutually reinforce one another. The relative-
deprivation process depends on the fact that communications about the
victims and the saliency of the victims as a reference group increase
rapidly as the number of victims themselves increase, so that feelings
of deprivation are kept from increasing proportionately to objective
deprivation, and may even be reduced.

The process of increasing opportunity structures is another
compensating mechanism which operates directly from the scope and
distribution of the impact. The larger the disaster, the more people
need help and are themselves prevented from helping others. At the

same time, however, the access to the victims of those not themselves incapacitated increases. The normative process is initially determined by the ideology and values of the community, the beliefs which develop— through various processes—concerning the causes of the suffering, and the extent of identification with the victims produced by the identification process. Those who initially help the victims do so either because they already hold a normative standard requiring them to do so, or because of feelings of personal sympathy for the victims, or more usually both together. Those who are not moved to act by either of these factors observe the behavior of those who are. At some rate of helping behavior, the inactive people begin to perceive a community norm requiring help for the victims, and they are motivated to follow suit lest they be condemned or otherwise sanctioned for not displaying normatively expected behavior. This then sets off a self-reinforcing process, since the more people help, the more people perceive a norm requiring helping. The perception of a community norm also reinforces and makes more stable the helping behavior of those initially motivated by individualistic emotions of sympathy. Finally those who did not at first hold the norm themselves tend to internalize what they perceive to be accepted community standards. Thus there is a mutual reinforcement of normative standards, perceived group norms, and conforming behavior.

It will be seen that the output of one process forms the input for other processes, and that the whole is linked up in mutual dependency. How many elements can be missing without the system failing is a problem which might be investigated through careful description and analysis of available or future cases.

Another general problem is, what are the limits on the capacity of each of these mechanisms and of the entire system? The relative deprivation mechanism is not unlimited in its capacity to compensate for increased severity of impact. At some point the number of sufferers becomes so great relative to the resources of potential helpers that effective help cannot be given them without sacrificing primary group loyalties. The result will probably be a tendency to withdraw attention and identification from the suffering mass and concentrate on the local or primary group. The communications mechanism can be broken down by excessively severe impacts which physically isolate small groups from one another and destroy the mass media of communication. The expansion of the opportunity structure, permitting more people to help victims, reaches a point where the able and willing helpers are all mobilized; further losses beyond this point cause a net decline in the percentage able to help others. Overload of demand, failure of resources, and breakdown of other mechanisms would undoubtedly put strain on the normative mechanism and result in a

turning away from unachievable standards. The varying levels at which these turning points are reached—in different types of social structures or for different types of impact—are an important problem for future investigation.

Two Other Models of Collective Response to Stress

It may be useful to compare this model with two others. Caudill's (1958) essay, The Effects of Social and Cultural Systems in Reactions to Stress, suggests that small-group or interpersonal systems may be called on to compensate for an overload on the individual personality system. His analysis of this process can be formalized in the following scheme:
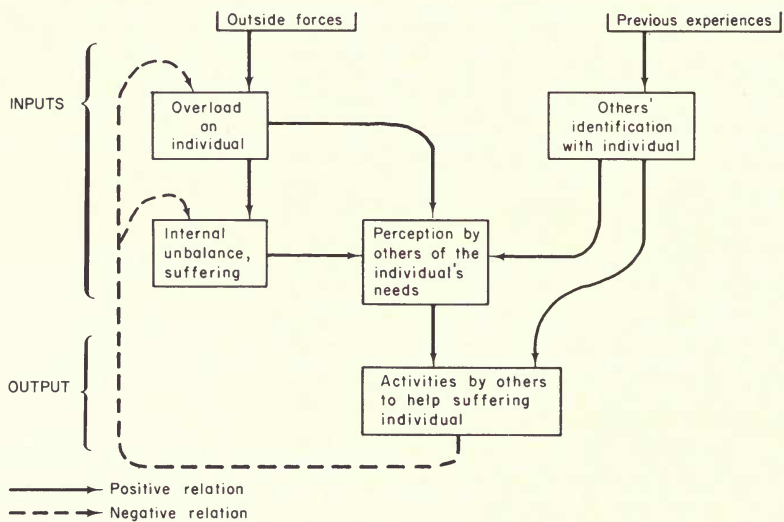
Figure 4-10. Caudill's Model of Interpersonal Systems Which Compensate for Individual Stress

This model is essentially similar to the one presented previously for community response to stress on some of its members, although it is highly simplified.

A case study of a community which approached absolute zero in community solidarity is Banfield's (1958) The Moral Basis of a Backward Society. The Southern Italian village of this study suffered from extreme poverty and lack of opportunity and a high death rate which left many orphaned children. In the face of these needs the local aristocrats were indifferent, most of the professionals and officials were either indifferent or resigned, and the common people

retreated into a jealous seeking after individual family interests which precluded common action of any sort to deal with the problems. The picture is even worse than in a normal stratified traditional society, because the rich have no sense of noblesse oblige and the poor have no solidarity, either in political-economic organizations or in extended families. Banfield traces this extreme social failure to a land tenure system which did not permit an extended-family system, and on a resulting vicious cycle in which fear for the welfare of one's children led to amorality and selfishness on the part of parents toward other families, which maintained the poverty and high death rate, the dangers of children being left as poor mistreated orphans, and so back to paren-tal fears again. The result is to institutionalize a chronic disaster situation without even the solidarity normal to most traditionalistic societies. This situation too can be schematized in the same form as the therapeutic community response (Figure 4-11). Banfield notes that an outside impact on the system—the reduction of the death rate through modern medicine—is starting to erode the fears of leaving one's children as poor orphans, and thus may eventually change the system entirely.
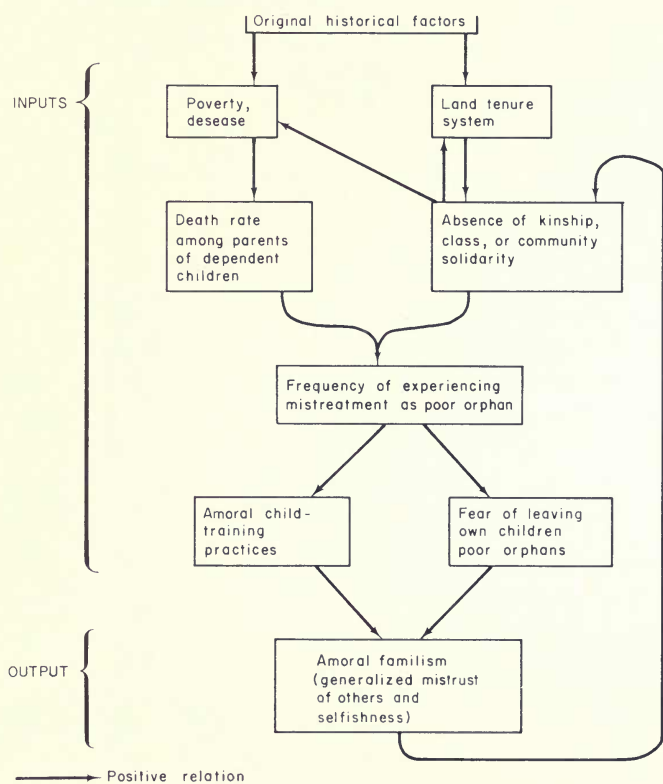

Figure 4-11. The System of Variables Maintaining "Amoral Familism" in a South Italian Village

Termination of the Therapeutic Social System

The norms of altruistic sharing, mutual identification, and social closeness which so frequently appear in the disaster-struck community invariably disappear; otherwise disasters would have left the world scattered with Utopian communities. The "decline of the post-disaster Utopia" is described in many case studies; usually, however, in vague allusive terms or as an "obvious" return to "normal." The precise mechanisms by which the decline is brought about are not clearly specified. We are told that people get tired of helping activities, that enthusiasm wanes, that normal antagonisms revive.

Mechanisms of Decline

If we consider the mechanisms which created the therapeutic system, as outlined in our scheme earlier in this chapter, several possible explanations are suggested. Most directly, it is possible that the output of the therapeutic system—the helping behavior toward victims—so reduces the difference in deprivation between victims and their benefactors that such supportive behavior is no longer required; this fact is perceived and feelings and behavior are adjusted accordingly.

There is however no guarantee that such a precise and rational adjustment will take place. It is possible that other mechanisms reduce the output of supportive behavior while severe deprivation still remains.

One way in which therapeutic behavior may decline faster than the needs of the victims is through individual psychological processes. The experience is forgotten, or if it continues the normal standards are forgotten. These explanations assume automatic mechanisms by which the effects of a single experience or of recurrent experiences on an individual become progressively less as time goes on. Unless the social system restimulates the original experience, or supports the first emotional reactions with other motivations, the behavior evoked by the disaster will gradually be reduced.

Another possibility is that the losses of the helpers begin to cumulate until they become more significant to them than concern with the victims. The unmet needs for their normal services as family members, wage-earners, and members of organizations become increasingly serious over time. Organizational leaders and role partners who are not equally exposed to disaster experiences may demand a resumption of normal roles even while the disaster worker feels part of the "therapeutic community." These pressures

may cause role conflict and withdraw people from many kinds of helping behavior while serious needs still exist. To maintain sufficient helping behavior, it would be necessary to find ways of spreading the sacrifice more evenly, and supporting those who have full-time helping roles. Division of labor is reinitiated, and with it the differentiation of experience begins which permits those not directly concerned to lose identification with the sufferers.

Still another possibility is that sympathy for the victims may be eroded by changes in perception of the victims and their moral worthiness. The grasping behavior, ingratitude, or unworthiness of a few may be magnified in rumors or in the mass media until they replace the "extreme sufferers" as the salient reference group; then sympathy is generally lost. It has been suggested, however, that this may be only a rationalization supporting withdrawal of those who are already tired of being altruistic.

In one of the Dutch communities studied there developed a generalized suspiciousness between individuals and social classes, and widespread hostility toward the women's organization of a nearby town which took charge of distribution of relief, for alleged favoritism and incompetence. The problem in this case appeared to be a shifting in informal norms regulating requests for relief.

> Relief and reconstruction were something new. There were no rules at all here, since the social support of tradition was lacking. . . .

> During the time when the clothing was being distributed, jealousies and envies sprang up among the people. . . . Everyone was afraid that someone else was receiving more than he. . . .

> Besides excessive greediness, there were also cases of excessive reserve. . . .

> It was not, however, only a question of greater or lesser greediness, as those interviewed often chose to describe the matter. . . but also a lack of a uniform organization. This was clearly shown in the distribution of the camping equipment. . . . This was done according to statements of need. Gradually, such statements assumed a more or less standardized form; one presented a statement of certain things, and not of others, as in the returns for income tax, and presently the routine of requesting aid began to seem like a normal reaction. Once this habit

was formed, the first groups felt defrauded for having
asked too little, and thus bitter tensions were created"
(Nauta & van Strien, 1955, p. 64).

The difficulties arising out of the "discrimination" between early
and late applicants had finally to be resolved by getting two local people
to make a mass reassessment of the cases. These were a laborer and
a district nurse.

These people who gained authority not only received
respect from the community, but were also well-
acquainted with the situations and families concerned.
. . . The people demanded only one thing from these
authorities, that they be "just," that is give everyone
his "due" (p. 65).

Mechanisms for Extended Maintenance

For a community to maintain permanently the extreme generosity
and mutual concern of the first days after a disaster is probably impos-
sible without extraordinary indoctrination and commitment to Utopian
goals. But the maintenance of communications about the suffering of
others, of social intimacy between people in different positions, and
of ideologies and beliefs which emphasize collective responsibility for
the welfare of all members of the community might make it possible
to achieve permanently higher levels of community solidarity and
mutual helpfulness than are normal in most modern societies. Whether
this loss of social differentiation and individual responsibility would
cause a decline in economic or intellectual productivity is another
question, which experience in the kibbutzim of Israel and future
experimental communities may ultimately answer.

The practical question for relatively small-scale disasters is
how to maintain activities designed to restore both individuals and
community facilities to an adequate level of performance, so that
normal standards of life are restored for the bulk of the population.
Of course the extreme sufferers who have been crippled or whose
families have been killed cannot be restored to the status quo ante
by any amount of economic aid; these irreversible losses are the
basic tragedy of disaster. But for most people life can be made good
again—as good as previously at any rate—and for the extreme sufferers
life goes on and new adjustments at some level are made.

The spontaneous emotional outpouring of the first few hours,
and the normatively directed altruism of the first few days, provides

goods, services, and emotional support for victims in the short run. In the long run these individualistic and informal arrangements can be replaced to some extent by organized arrangements. Mutual aid can be bureaucratized, routinized, and made reliable in spite of the ups and downs of mass emotions. This process by which formal organizations provide for continuing help and reconstruction requires attention.

Of course if all victims must engage in mutual help to maintain their existence, and normal ways of making a living and looking after the family are unavailable, the disaster system may go on for long periods without reverting to normal. Even so the emotional tone of these cooperative relationships may become considerably less warm and generous as expectations are adjusted to the new way of life and the sense of being relatively well-off compared to the most extreme sufferers is dimmed through saturation or forgetting.

One example of long-term helping behavior arises when families in the undamaged areas voluntarily share their housing with victims evacuated from a disaster area. These evacuee-host relationships may go on for a relatively long time, far beyond the duration of the general "therapeutic community" atmosphere. They represent a highly intimate, demanding, and prolonged form of helping behavior on the part of the hosts. The dynamics of these relationships have been studied very systematically in two flood disasters, and we will not try to summarize the findings here. One volume of the Holland flood studies is largely devoted to their analysis (Lammers, 1955), as is a research report on the Farmington, Connecticut, flood of 1955 by Kincaid and Klausner (1956).

The crucial variable in the stability of this relationship seems to be the development of well-defined social roles for the situation. Kincaid and Klausner write:

> "We should like to offer a hypothesis which seems to account, in part, for the existence of tension in the sharing situation. It seems to us that one of the fundamental problems derives from the attempt of the evacuee and host families to define their relationship. They must settle problems of mutual rights and obligations, of the distribution of authority and status. One of the sources of tension could therefore be in the lack of clarity of norms defining and regulating these and other facets of the relationship" (1956, p. 68).

This hypothesis is offered to account for the finding—exactly contrary to all expectations—that culturally similar pairs have more difficulties than culturally different pairs of families. It would also account for some of the trends and turning-points in relationships as time or degree of crowding vary.

The evacuee-host relationship is an example of a partly institutionalized form of therapeutic behavior which outlasts initial emotional reactions to the disaster, and which must face the resulting problems. As a mass people-to-people operation, it cannot simply be turned over to paid specialists but must continue to motivate ordinary people to play appropriate helping roles.

Possible Permanent Effects of the Therapeutic Community Experience

It is of course conceivable that some part of the post-disaster sense of solidarity and mutual helpfulness will long outlast the original needs which gave rise to it, finding new opportunities for expression in daily life and community affairs. The pre-disaster situation need not be thought of as the ultimate condition of human existence.

The mechanisms by which changes become permanently embodied in social systems as a result of particular events are little known; a long-term follow up of disaster-struck communities might present an opportunity for studying these processes, if it was possible to find cases in which permanent change took place. Students of community systems speak of the influence of community traditions, of the community ethos which drastically differentiates the behavior of otherwise similar communities (Zimmerman, 1938; Vogt & O'Dea, 1953; DuWors, 1952). The mass dynamics of interpersonal influence by which such traditions maintain their influence over long periods are only now being systematically investigated with the aid of computer simulation and other new techniques of model-building.

CHAPTER 5

FORMAL ORGANIZATION AND THE RESTORATIVE SYSTEM

The therapeutic social system described so far has consisted mainly of informal mass activities. Individuals and families rescue, shelter, feed, reassure, and commiserate with other individuals and families. The state of public opinion which supports this individual action also supports action by the public authorities and large-scale organizations devoted to relief and reconstruction.

Recent American disaster studies have been dominated by concern with the psychology of warning, impact, and immediate post-impact behavior. The period of rehabilitation has not been systematically studied. Qualitative descriptions are available in Moore's study of two Texas tornadoes and in studies of Hurricane Audrey in Louisiana (Foley, 1957; Fogleman, 1958). Prince's (1920) study of the 1917 Halifax explosion and the three Dutch communities studied from the 1953 flood deal extensively with the process of reconstruction, although here again only in terms of qualitative analysis.

In these case studies certain patterns of organizational behavior appear; but until more cases are systematically recorded and analyzed, the generality of these patterns cannot be known. These patterns include the following:

1. Local government frequently is unable to cope with the overload of problems, and is replaced by an improvised emergency government such as a Citizens' Committee, or by authorities from state or national agencies.

2. Important roles in relief and restoration are given to voluntary fund-raising agencies, which necessarily must compete for credit; even as these organizations provide relief and rehabilitation to the victims, they tend to engage in competitive behavior to insure public recognition of their services. Public agencies having some degree of independence may also act competitively. Thus initial cooperation among organizations tends to break down.

3. The public reaction to organizations is much influenced by certain symbolic behaviors as well as by rational assessment of their

achievements; bureaucratic and emotionally neutral professionalism tends to create misunderstanding and culture-conflict, sometimes accompanied by widespread false rumors and public hostility.

    4. The relief and reconstruction activities may arouse old class antagonisms or value conflicts which overcome the emergency period preoccupation with common goals.

    5. Very large scale disasters require major national programs; local efforts are overwhelmed and become ineffective.

The Capacity of Local Government to Deal with Overload

    Community-wide disaster confronts local government with a great overload of decisions and administrative work. The number and variety of programs needed far exceeds the normal administrative capacity of most local governments, so that a temporary expansion of governmental machinery is required. This generally takes the form of setting up committees to deal with different aspects of the disaster, headed by people drawn from public or private organizations which have relevant skills. But besides the expansion of the administrative machine, there is a problem of overall leadership. Outside of the largest cities, local government tends to be a small-time operation. The role of the chief executive is minimized by splitting up functions among many independent boards and overlapping governmental units. The mayor is often a part-time official; low pay and low prestige in local government result in recruitment of less able executives, a condition aggravated by widespread corruption of local politics. There-fore, even the top leadership of the restoration effort may have to be recruited from outside the normal governmental setup.

    We have little but incidental descriptions of the response of local governments to the needs of the restoration period after disaster. In several cases one sees the local government virtually superseded by a Citizens' Committee; in others the local government coopts private groups to handle disaster services but retains the overall leadership. In the Chicago fire the city government played a major part in the relief and reconstruction. After the Galveston hurricane-flood of 1900, the first council-manager city government in the country was set up specifically to meet the disaster needs, which the previous weak and bankrupt local government was not capable of meeting (Downey, 1938).

    One of the first scholarly studies of a community disaster, Prince's (1920) analysis of the Halifax explosion of 1917, describes

the bypassing of local government by outside experts and an ad hoc Citizens' Committee. Late in the day of the disaster, local government leaders had set up a number of special committees, but five days later when the American professional relief workers arrived they found the local leadership "overwrought with fatigue" and overwhelmed by the magnitude and novelty of their task.

> In less than twelve hours from the time the American Unit from Boston arrived, the necessary features of a good working plan were accepted by the local committee (p. 81).

> The scheme as finally decided upon consisted of a small managing committee with sub-committees in control of food, clothing, shelter, fuel, burial, medical relief, transportation, information, finance and rebuilding (p. 82).

The need to bring in outside experts before basic policies could be set arose mainly because the local government had no experience whatever with mass relief work.

> A third great contribution of social service (the American social-work specialist) was that of education in the principles of disaster relief. It was the problem of getting the idea of social conservation understood and established in a community which has not given the subject any thought, and which was quite unfamiliar with the ideals and purposes in view. This was the cause of much delaying of plans, overlapping in giving relief, and giving without substantial inquiry. It explained also the reason for the abundant criticism which arose. When criticism came there was, consequently, no well-informed body of public opinion to which to anchor the committee's work.

> Educational effort on this subject may be said to have begun with a masterful presentation of the nature of rehabilitation at the meeting of the managing committee six days after the disaster. . . . It was this original absence of socialization, this lack of understanding of the true nature of disaster psychology and of the accepted methods of relief that at first made the community so utterly dependent upon the visiting social workers (Prince, 1920, pp. 84-85).

The Citizens' Relief Committee was so divorced from the normal local government that no city officials were on the executive committee. Headquarters was moved away from the city hall.

. . . The Mayor entered a complaint that the City
Council and Corporation had been ignored by the acting
committees. The Citizens' Committee exercised the
general control. They were entrusted with the special
grants and the civic authorities, Board of Health,
police, etc., so far as emergency matters went,
cooperated with them.

What the civic government continued to do officially
was rather in the way of providing the stiff formality
of proclamation to the carefully weighed suggestions
of the Citizens' Committee. . . . We have faithfully
described municipal aid in disaster as falling under
the general category of service, rather than direction
(Prince, 1920, p. 104).

This situation appeared justified to Prince:

Catastrophe calls for much more than protection. It
calls for a procedure, a guidance, a paternal care,
and it calls for it at once. If we ask whether it be the
function of government to take the foremost step of
leadership in this care, the question is one for Political
Science. If we ask the more sociological question
whether governments actually and always do so, the
answer is unhesitatingly—they do not. Says Cooley:
"Like other phases of organization, government is
merely one way of doing things, fitted by its character
for doing some things, and unfitted for doing others."
This proved one of the things for which it was unfitted.
Not one of the government authorities, civic, provincial,
or federal, at once assumed and held authoritatively and
continuously the relief leadership. Indeed it is a peculiar
commentary that they were so scarcely thought of as
likely immediately to do so (pp. 102-103).

Prince notes, as exceptions to this rule, the Chicago and
Baltimore fires, in which the city government "took immediate
and responsible action."

The Holland flood disaster provided examples of both patterns
of local organization. The government of the municipality of Kortgene
moved to the unflooded village of Colijnsplaat.

During the first few days it was a "madhouse" in
Colijnsplaat, to quote the Alderman directly, and both

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he and the burgomaster were affected by the strain.
. . . These two people were forced to bear all the
tensions that arose from the situation (Nauta & van Strien,
1955, p. 54).

In spite of the overload which caused the Burgomaster to fall ill
from exhaustion after two weeks, leaving the Alderman in charge, the
local government maintained leadership over the recovery effort, with
its improvised committees.

By contrast, in another town the local leaders were first isolated
by the flood and then were so upset by the disaster and their own per-
sonal losses that they did not provide effective leadership.

With the exception of one Alderman, the entire
corporation (Burgomaster and two Aldermen) privately
suffered severe losses. The blow was especially severe
for the Burgomaster. The sea not only disrupted his
municipality but for the second time in eight years it
deprived him of his property and library. Due to consti-
tutional difficulties he suffered a partial psychic collapse.
The Aldermen were almost equally upset for the first few
days (Nauta & van Strien, 1955, p. 188).

The analyst contrasts the local government leaders with the
"experts" who "understood their duty and, each in his own sphere,
went into action."

In our opinion it is important that under the circumstances
of the first few days it was easier to do the actual work
than to direct the work from a high quarter. . . . The
growing disaster structure only allowed of coordination
and leadership by non-specialists to a limited extent.

It cannot be denied that even later on, when civil and
military assistance from outside were forthcoming and
energetic leadership and division of tasks became
essential, the authorities exercised too little power
(Nauta & van Strien, 1955, p. 188).

These agencies included not only local government departments
but the Red Cross, local contingents of national government forces,
and private business firms with important facilities and skills. Such
cooperation between different levels of government and among various
public and private institutions was also found in the previous Dutch
municipality, but it was presided over by a local government repre-
sentative on the "coordinating committee."

In the Mexican city studied by Clifford, we have already noted the complete breakdown of local government during the emergency period; the rehabilitation effort was largely directed by the provincial and federal authorities. By contrast the U.S. city of Eagle Pass with its modern city-manager system of government carried through relief and cleanup operations with notable despatch. (Clifford, 1956, pp. 63-64)

In a third Dutch town, the Burgomaster did not provide effective leadership in the first period, and fell ill shortly thereafter. Leadership thereafter was located in an improvised Reparations Council set up by the Burgomaster rather than by the elected officials; this council was dominated by a highly competent and active man who had at one time been a leading figure in local politics.

> . . . It appeared that the Reparations Committee—Mr. Y.—
> was more competent than the Council. . . . The task of
> this committee was a purely advisory one, but in practice
> all relief and rehabilitation measures emanated from it
> (Ellemers and Veld-Langeveld, 1955, p. 145).

This case represents a situation of bypassing local government by a committee of competent outsiders.

The suggestion of the Dutch studies is that local government officials are not selected on the basis of competence in coping with emergencies; if they have such competence, it is an accidental trait of personality rather than a dependable characteristic of their social role.

There is considerable evidence that local government tends to be weak and limited in societies dominated by business interests. Rossi (1961) notes the prominent role of Citizens' Committees in carrying on normal community functions:

> Significant community enterprises are often initiated
> outside the framework of local government, aided and
> abetted by a proliferation of civic associations and
> citizen committees. In many communities the Mayor
> and City Council often appear to be dragging their heels
> while organized "prominent" citizens exhort the commu-
> nity to push towards progress. The voluntary associations,
> ranging from the more permanent varieties—the Commu-
> nity Chest, Chamber of Commerce, and service clubs—
> to the ad hoc Citizens' Committees, have taken over many
> of the functions of initiating social change and marshalling

community support for such changes that are formally allocated to local government and to political parties (pp. 301-302).

Among the common characteristics of these supplementary organizations which carry on community business Rossi notes the following:

First, such community organizations are the focus of the community activities of the elite of wealth and status. Second, such organizations are not responsible to a constituency broadly defined as is local government, but are run as private preserves. Finally, these unofficial community organizations serve to redress the local imbalance of power by giving the elite of status and wealth important sectors of community life to control (pp. 302-303).

Lynd (1937) describes the "culture" in which the local government of Middletown traditionally functioned:

1. A tradition of approaching and stating problems negatively rather than positively. The legal structure defining the responsibilities of public officials stresses these negative checks and offsetting balances, and custom and the clamor of vocal minorities representing vested interests see that these legal checks are maintained. The outward slogans of Middletown's municipal leaders are "Economy," "We will reduce taxes," "We will give the city cheap administration," and "Harmony;" and the animus of civic administration is: Do as little as necessary to keep people reasonably satisfied and to get by . . . (p. 123).

In a culture so patterned, the likelihood of the emergence of forthright civic social change through the city's elected and appointed administrators is curtailed almost to the vanishing point (p. 125).

The result was an extremely ineffective response to the economic disaster of the depression. Not only was little done to help the unemployed, but the city could not utilize them to undertake long-needed improvements. It was only when Federal authorities released "the blessed rain of Federal funds" that "the straining city brought out projects big and little to catch the golden flood." The initiative passed to the Federal government by default.

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Moore (1958) notes the weakness of the local government in tornado-struck Waco, and the strait-jacket of negativism in which the business culture of the community placed it:

> Economists and journalists agree that Waco could have grown faster but did not do so because of the "Old South" economic conservatism of the controlling figures in the city. . . . Even with the war-induced prosperity, reaction continued. There was opposition to the "waste of municipal funds" for employing a zoning specialist, for providing sewage lines to a new and undeveloped industrial area laid out to attract new businesses, to the building of a through-way to handle peak traffic loads, and to the requirement of more up-to-date plumbing and sewage facilities (Moore, 1958, p. 32).

The result was that a drastic reconstruction was rejected, and the old buildings were patched up, given new fronts, or if too far gone torn down to make parking lots. A new building code, designed to prevent the large number of casualties which resulted from collapse of poorly-constructed buildings, was not strongly enforced.

It seems likely that the weakness of local government can be a major liability in time of large-scale disaster, especially if outside help is not showered upon the community. To some extent the weakness of local government may be compensated by creation of ad hoc Citizens' Committees. There are no systematic studies of the composition of such committees in disaster; data from non-disaster situations suggest that they will represent mainly the business community. Whether this unrepresentative character has good or bad results depends upon the kinds of action required to deal with the crisis, in relation to the interests and abilities of the business community.

Interorganizational Relations During the Restoration Period

A critical characteristic of organizations is the basis on which they obtain resources and authority from the community. Thompson and Hawkes point out that both voluntarily supported and tax supported agencies dealing with disaster are in a special position requiring them to secure public recognition of their services, if they are to be supported.

> For the disaster-ready organization, "social credit" for its role in disaster would seem to be indispensable. Generally speaking, these organizations gain their support

indirectly, rather than by direct exchange through explicit contract. Rather, there is an implied contract that, in exchange for tax payments or voluntary contributions, the disaster-ready organization will act if necessary. If these organizations are to obtain support in the future, then, it becomes vital for them to make clear to the community that they did perform as promised. Hence we would expect competition for social credit to be almost inevitable among disaster-ready organizations (Thompson & Hawkes, 1962, p. 295).

Such competitive behavior is reported from virtually every disaster studied.

Rosow describes in some detail the competition between the Red Cross and Civil Defense in the Worcester tornado. A general dispute over who held "overall authority" over relief work was largely verbal, since the Civil Defense agency had little resources to contribute. One significant incident, however, was the refusal of the Red Cross to accept a list of casualties produced by the Civil Defense agency, apparently out of unwillingness to recognize that Civil Defense had a legitimate right to act in this area. Rosow (1955) stresses that relief of those in need went on almost unaffected by these front-office arguments, but the competitive spirit was manifest in them. In the Beecher tornado, Rosow notes acrimony in relations between the Red Cross and the Salvation Army. This seems to be a standard feature of disaster situations, arising because of the Red Cross' attempt to maintain its claim to be the sole official channel for relief funds. Competitive publicity activities are also reported by the NORC study of the Arkansas tornado (Marks & Fritz, 1954), the Moore (1958) study of Waco, and the Form and Nosow (1958) study of the Beecher tornado. In the last case the Red Feather (Community Chest) organization also became a point of conflict.

Red Feather's independent fund-raising and rehabilitation efforts not only complicated the already difficult administrative tasks, but threatened the Red Cross' image of being the dominant rehabilitation agency. The plethora of private aid, actual or promised, augmented for the Red Cross problems of clearance, of building prestige in the local community, and of obtaining control over rehabilitation (Form & Nosow, 1958, p. 206).

A number of other incidents of competitive behavior from various studies are cited by Thompson and Hawkes (1962). One involved the desire of certain local officials to demonstrate dramatically, by

bringing the trailers into town, that they were doing their best for the sufferers.

The relationships between voluntary relief organizations are not governed by any effective central authority; a state of "anarchy" exists in the field of fund raising and distribution, or perhaps more accurately a "free competitive market" exists. To what extent is this competition helpful or harmful? No accurate assessment is possible, although there is some highly interesting evidence from comparative studies of counties in which there has been conflict or cooperation between United Funds and the National Foundation for Infantile Paralysis (Wiggins, 1960).

The Red Cross, which is the most professional, the most active in long-run rehabilitation, and has the widest area of responsibility throughout the nation, tends to resent competition of more spectacular, short-range, localized relief campaigns of other agencies. Born in an age of scarce resources and enormous need, accustomed to husbanding its funds to achieve the maximum return to self-support in the long run, and trying to maintain some quality of treatment for victims in many local disasters, the Red Cross seems to have great difficulty in accepting the more generous standards which some communities are actually willing and able to apply to relief of their sufferers, and in cooperating with other agencies in such local campaigns. These difficulties in professional norms and organizational policies are accentuated by the difference in social rank between Red Cross leaders and volunteer workers and those in other organizations (Form & Nosow, 1958, p. 208).

Public Attitudes Toward Organizations in Community Disaster

The NORC Arkansas tornado study (Marks & Fritz, 1954) provides us with our only systematic data on the extent of public participation in organized relief activities, either as donors of services or as recipients. It is apparent from these figures (quoted in Chapter 3, this volume) that formal organizations are a major source of opportunities for helping behavior, especially for those who live relatively far from the disaster scene or who lack direct social ties with the victims. It is probable that as the informal aspects of the therapeutic social system fade away and normal private interests replace generous personal emotions as dominant motivations, formal organizations may be a major factor in maintaining the continuity of participation in the restoration effort. This process of the bureaucratization of altruism has not been systematically studied in disaster. In the special area of service to polio victims, the process of maintaining or changing

motivations through organization has been explored by Sills (1958) in The Volunteers.

There is a good deal of data, some quantitative, some qualitative, about public attitudes toward relief organizations in disaster. The recurring fact in this area is the existence of a significant minority who express hostility toward the Red Cross, and to similarly professionalized relief agencies. Like the phenomenon of competitive behavior between the Red Cross and other relief groups, this hostility has been observed in almost all disasters systematically studied in this country. One can go back to the Halifax explosion of 1917 and find the same complaints being made there about the work of the Citizens' Relief Committee.

> It is regrettable however to have to say that the cause of social service did not receive in the community the much larger repute which its magnificent work justified, chiefly because the innumerable "typewriters, card catalogues, involved indexes, and multifarious office equipment" were not made less obtrusive. The merest touch of "cold professionalism" soon became fuel for the burning disapproval which spread through the city regarding the methods of relief. Letters to the press gave vent to the indignation of the sufferers (Prince, 1920, p. 92).

The Moore (1958) study of the Waco and San Angelo tornadoes presents the following ranking of "adequacy of performance" of organizations, both rescue and relief oriented. (Table 5-1)

The Form and Nosow study of the Beecher tornado made a content analysis of all references to organizations in its interviews with an unsystematic sampling of voluntary rescue workers. (Table 5-2)

The NORC study of the Arkansas tornado reported the following comparative evaluation of relief organizations. (Table 5-3)

The NORC report, Moore, Form & Nosow, and Fritz have all analyzed the factors which underlie this "anti-Red Cross syndrome." The basic difficulty seems to be the symbolic appropriateness of organizational actions. The Salvation Army benefits by the expressive quality of its behavior in contrast to the Red Cross's rationalistic approach. The Salvation Army hastens to provide food, a basic symbol of emotional support, as close to the scene of suffering as possible.

TABLE 5-1

Ranking by Informants of Adequacy of Performance
of Participating Institutions

	Rank	
Institution*	Waco	San Angelo
United States Army	1	6
United States Air Force	2	1
National Guard	3	3
State and city police	4	1
LOCAL CHURCHES	5	5
SALVATION ARMY	6	4
Municipal government	7	7
State government	8	9
LOCAL RELIEF-FUND	9	8
FEDERAL GOVERNMENT	10	12
Local agencies not named here	11	10
AMERICAN RED CROSS	12	11

*Agencies involved mainly in relief indicated in capitals. Two
agencies tied for rank 1 in San Angelo.
Source: Adapted from Moore, 1958, Table 17, p. 101.

TABLE 5-2

Evaluations of Selected Organizations by Beecher Residents

	Per Cent			
			Non-	
Organization	Positive	Negative	evaluative	Total
Fire departments	41	0	59	100
SALVATION ARMY	41	2	57	100
National Guard	23	4	73	100
Police departments	19	9	72	100
RED CROSS	18	27	55	100
Other organizations	40	5	55	100

Source: Adapted from Form & Nosow, 1958, Table 17, p. 119.

TABLE 5-3

Comparative Evaluations of Relief Organizations

Evaluation	Per Cent of All Persons	
	In Impact	Not in Impact
Both Red Cross and Salvation Army did well	40	31
Salvation Army did better than Red Cross	16	7
Red Cross did better than Salvation Army	1	1
Both organizations performed poorly	-	-
Other organizations did better than either	1	-
No comparative evaluation reported	43	60
Total	100	100
Number of respondents	(139)	(158)

Source: Marks & Fritz, 1954, p. 275, Table 5-17.

It provides for all comers without investigation or restriction, in keeping with the values of the "community of sufferers." Its competitive behavior is less overt and apparently involves less formal publicity, relying instead on the inherent human interest of its deeds. The Salvation Army is outgoing in seeking people to help instead of waiting for them to apply. Finally, it does not attempt long-term rehabilitation and thus is spared the problem of allocating funds rationally among many claimants, with the odium of financial investigations, means tests, and other rationing and policing devices.

It is probably very difficult to achieve a rational allocation of limited resources for long-term rehabilitation and at the same time use the symbolic language of uninhibited generosity demanded by the suffering community. Moore suggests that unrealistic expectations of abundance play a part:

Perhaps the Red Cross has oversold itself as a disaster-relief agency. . . . Through this effort to imprint on the public mind that "when disaster strikes, Red Cross is there," the idea is perhaps created that the Red Cross will repair all damage and heal all wounds, no matter how great the disaster. Such expectations can lead only to frustration (1958, p. 177).

This question and the related ones of compensation on the basis of need versus loss, and of tax-supported public compensation versus voluntary private relief, are linked to the economic problems of disaster, which will be discussed in the next section. It may be possible, however, for the Red Cross to bring the symbolic qualities of its behavior somewhat closer to the values of the community in disaster, without surrendering its rationality.

Social Conflict over Relief and Reconstruction

A recurring conflict over the principles of disaster relief is that between meeting minimum needs and compensating according to loss. The "need" principle has been upheld by the Red Cross and the traditional social workers. Its stated goal is to restore the victims to self-support at minimum cost (Deacon, 1918, 172-174).

In operation this means that more is given to a poor family than to a formerly well-to-do family which still has financial resources. Even if the poor and rich receive equal aid, the relative positions of rich and poor are somewhat more equal than before, and the poorest may actually be better off than before.

The goal of minimizing the burden of contributions or taxes on the non-disaster population, strongly accepted by traditional middle-class ideology, thus runs directly counter to the goals of the disaster-area middle and upper classes, which is the maintenance of their relative class position. The alternative is to offer either full or proportionate compensation for loss; but this is generally far too costly to be supported by voluntary contributions and leads to government intervention. This is the paradox of the long controversy over "need" versus "loss" and private versus public assistance.

The Dutch flood provides an example of this conflict and of the modern trend in its resolution.

The greatest resentments. . . arose among the different "classes." People often did not feel defrauded personally,

but as a farmer, a tradesman, or a laborer, and in this connection the contrast between farmer and laborer was the most outstanding. Especially in the distribution of the Red Cross parcels according to an international norm, "what do you have?" instead of "What have you lost?", many farmers, as well as members of the intellectual elite, felt that the laborers fared better than they did.

> They remarked, "They now even have tablecloths which they never used to have. In addition, they now have many more sheets in the cupboard than before the disaster, because the Red Cross issues a certain number per person."

> The relations between farmers and laborers were aggravated still further from the point of view of a number of farmers, because the laborers were working on the dykes, and the farmers were afraid that they would not come back under the old conditions and with the same "good mentality" (Nauta & van Strien, 1955, p. 66).

These difficulties seem to involve a feeling of relative deprivation especially among members of the upper groups at seeing goods distributed on an equalitarian basis, and seeing income differentials reduced by the disaster work pay rates. The potentials for conflict of an equalitarian norm of "to each according to his need" introduced into a stratified society are clearly indicated in this example. The solidarity of the emergency period, when human life was at stake, the time-horizon of people limited to the next few hours, and their aspiration-levels limited to bare necessity, had disappeared with the flood waters. For the upper classes, "restoration" meant restoration of inequality sanctioned by tradition, and the temporary maintenance of equality appeared an offense against justice.

> During the period of relief, the class-differences in Noord-Beveland appeared again in all their sharpness, temporarily with even more vigor than in the times before the disaster.

> The class-differences stood out very clearly when, in June, the official inquiry was held to assess damage to furniture, houses, and businesses. This assessment, and the first provisional payments, took place on the basis of a uniform system which, the people of better

circumstances feared, would work in the direction
of social levelling. The intellectual elite (the pro-
fessionals) also strongly feared this.

In July, however, when it became known that a system
of qualification according to prosperity would be applied,
there came an atmosphere almost of satisfaction, and
the people in general began to have confidence in the
settlement of damages, although little is known of the
attitude of the working-men's group in this respect
(Nauta & van Strien, 1955, pp. 66-67).

The second village studied was still largely evacuated at the
time of the research, and conflict over restoration had little chance
to develop. In the third village, long-standing class divisions created
conflict immediately after the flood over the issue of general evacua-
tion. The small-businessmen and organized workers actually defied
the legal orders of the local government, dominated by the old social
elite of officials, higher professionals and landowners.

Another conflict broke out over upper-class domination of the
distribution of clothing.

A woman-representative of the central Zeeland aid-
organization from Middleburg arrived in Zierikzee.
She proposed a detailed scheme for a clothing distri-
bution team in which all denominations and social
groups would be represented. She even brought a
list of people who might be appointed to the committee,
including people from working-class circles. This was
probably not well received. A little later, however, a
ladies' committee was formed under the direction of the
Middleburg representative, consisting of four ladies
from the "elite" and a district nurse (van Doorn-Janssen,
1955, p. 200).

This group proved to be totally inadequate to cope with the
volume of work. After a month a larger committee was installed
including the old members plus several clergymen and more socially
prominent women; the volume of work much improved, but the crit-
icism from the public, especially from organized labor, continued.
Many charges (apparently unfounded) of class favoritism circulated.
Finally, after over four months, trade union representatives were
admitted to the committee, after questions had been asked in the
Provincial Legislature and a threat of investigation was made.

Both conflicts in this community represented the breaking through, under the stress of the disaster, of new classes claiming representation in what had been a highly exclusive upper-class regime. The attempt to handle the emotionally loaded issues of evacuation and relief by the old elitist methods brought to a head issues which had long been maturing, and which no doubt would have expressed themselves in other ways in the long run.

In the first village there was a reaction among middle-class groups generally against the apparent equalitarianism of the initial relief period and the threat of continued equalitarianism in compensation; in the last described village there was lower and middle-class revolt against an exclusive upper-class dominance. The resolutions of both cases of conflict tended toward a stratified but not an exclusively one-class dominated society; the most widely accepted conception of justice was one in which everyone had some participation in power, but economic rewards remain somewhat unequal.

If the values of the social classes render a compromise solution impossible, then there will be continuing conflict and bitterness. However, if techniques can be found which can satisfy minimum demands of all groups for justice, the conflict can be moderated and cooperation maintained. The early years of the Great Depression in the United States presented many examples of groups which were pushed too far in terms of their sense of justice: farmers threatened with mass evictions, workers denied the right to unions of their own choosing, unemployed miners literally threatened with starvation (Jones, 1941). It was the ingenuity of the New Deal in inventing or borrowing social techniques to satisfy the sense of justice of these groups, without too drastically violating that of bankers and employers, which permitted a peaceful solution of the situation. There was, to be sure, much violent talk on both sides, from outraged unemployed workers and from businessmen outraged by taxes, federal controls, and laws requiring collective bargaining with labor unions (Schlesinger, 1958, Chs. 23, 30). But the great majority on both sides found the compromise techniques acceptable relative to the alternatives of violent revolution or counter-revolution.

We have relatively little data on social conflict during the period of reconstruction in American natural disasters. Considering the frequent class, cultural, and value conflicts found in American communities in other situations, this might reflect the effectiveness of disaster in producing a temporary unity of purpose lasting through the restoration period. On the other hand, it may only reflect the inadequacies of the data, which are anything but systematic.

Moore does note some conflict, or at least private complaint—we are not informed as to how it was expressed—in the reconstruction of the downtown business area of Waco after the tornado.

> Within a week architects had produced a plan to replace the dilapidated and unsightly structures facing the plaza in which the City Hall is located with an integrated and harmonious development. But Waco was not ready for such cooperative effort (Moore, 1958, p. 32).

The basic division in the city was between conservative economic interests opposing rapid growth and modernization and more expansionistic and progressive interests of an unspecified nature, apparently also business interests.

> For a short time, the ancient fault line that had for so long divided the citizens of Waco was cemented by overwhelming and unifying emotions of fear, anxiety, sympathy, and fellowship. However, the division soon reappeared in complaints that the military rescue workers did as much damage as had the storm by pulling down sound walls in their haste to search the rubble for victims, that the attempts of the city administration to enforce the building code were detrimental and unfair to those who suffered damage to their property, that the new tax-evaluation study which had been proposed, and resisted for several years, was discriminatory, and in other complaints. From the other side came charges that some of the businesses and property-owners in the disaster area were sabotaging efforts to create a more modern community out of the chaos . . . (Moore, 1958, pp. 33-34).

> After the tornado this fundamental division made itself felt sharply at the political level. Once more a campaign was launched to change the form of municipal government and was supported by charges that city officials and their friends had failed to pay full and just property taxes and had gained other economic advantages unfairly. In less than a year after the tornado, the Mayor at that time had resigned his office and later left the city (p. 32).

Here again we see the negativism and habitual corruption or expectation of corruption which Lynd found in Middletown. How general these are could be investigated through the application of sampling studies to communities as units, with data obtained from special selections of informants in a large sample of communities.

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The Scale of Stress and the Required Level
of Institutional Response

The immediate response to any sudden disaster probably must depend much on personal motivations and individual skills. But the long-term responses depend on community and national decisions, on political agreement, on the creation of legal and bureaucratic mechanisms. We can cope with little disasters by spontaneous outpourings of help and by private charities like the Red Cross. But these devices could not cope with the Great Depression, and they are not coping with the continuing problem of mass urban poverty and lack of opportunity. And any very large scale physical disaster, whether a region-wide drought, a tremendous earthquake, or an atomic bombing of many cities, creates problems which can not be handled by these means. When a very large number of people are in need, the resources of the society as a whole must be drastically reallocated if effective help is to be given. Such reallocation of wealth is a major political question, not a problem of individual emotional responses, of primary group activity, or of voluntary organizations dependent on public fund raising.

To approach the problems of a very large scale disaster with nothing more than a social-psychological model is to repeat the great fallacy of the international tensions approach to war. Wars indeed begin in the minds of men, but not in the minds of men in general. They begin in the minds of some men, located in certain positions in highly organized social structures; and these men's minds generate warlike ideas in part because of the problems of these organized structures, not just because of individual blood-lust or hatred, and their orders are followed because of submissive as well as aggressive tendencies in individuals. National character and universal psychological mechanisms no doubt are important in predisposing people to play certain roles, in warmaking or in disaster relief; but the roles available are those permitted by the social structure.

The relief effort of a small community hit by a tornado may be a spontaneous, aggregative response of many individuals and small groups trying to help the victims—a collective behavior phenomenon, in the sense of unorganized, mutually influencing individual responses. The relief effort of any large community is likely to be bureaucratically organized and supported by a mass of givers responding both to their individual experiences and to systematic campaigns of mass persuasion. It is not just a bureaucratic system, and not just a spontaneous mass system, but a system of organizations and masses acting on one another.

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A striking feature of most community physical disasters studied in Western societies is the abundance of economic aid which flows in from the rest of the society. The economic stress of disaster is not typically borne by the local community. In the Halifax explosion of 1917, $35 million worth of property damage was done in addition to the long-term economic losses of the hundreds who were severely injured, crippled, and blinded. No less than $30 million was contributed by the people and governments of other cities and countries to restore the city and its people. This performance was of course enhanced by feelings of wartime responsibility and solidarity, since the explosion was caused by the presence of munitions ships in the midst of a densely populated port city (Downey, 1938, p. 197).

In other major disasters, relief funds themselves play a much less important role in the long-term reconstruction, although they are still important in helping families with heavy personal losses. In the San Francisco earthquake-fire, there was $500 million in property damage. Insurance payments amounted to $200 million; relief funds to less than $10 million (Downey, 1938, p. 125). Likewise in the Waco tornado, total damages were roughly estimated at $51 million, largely to business property. Insurance payments provided $8.5 million out of the total outside aid of $9.9 million (Moore, 1958, pp. 35-37). In the hurricane-destroyed communities of Cameron Parish, Louisiana, large production facilities owned by national corporations were restored by these outside organizations, which also gave much help to their employees in restoring their homes (Foley, 1957).

Quick outside aid has an important effect upon the morale and output of the local community population itself. A common secondary reaction to a devastated community is depression:

> After about six days, some of the evacuees began to
> return to Kortgene to search in the mud for some
> precious possession. . . . During these days, the
> people were most dejected. As they had said at the
> time of the interview that they could hardly picture
> the terrible destruction, so they could, on their
> return, barely imagine that everything would ever
> come right again (Nauta & van Strien, 1955, p. 59).

In the communities studied this depression was usually quickly replaced by a frantic effort and rising hopes:

> In spite of the misery, this attitude soon changed. . . .
> The daily entry and exodus of the women caused a great
> activity everywhere in which the cleaning up provided a

strong social stimulant. The question which everybody
was asking, when having a meal in the school provided
by the Salvation Army, or in (the inns), was "Have you
got rid of all the mud in the house?"

The homes were, however, hardly habitable, and the
return would have been almost impossible if it had not
been for emergency aid on a grand scale. This con-
sisted of the distribution of the so-called "camping
equipment." When they left their village, all the victims
had expected to be without material possessions forever,
or at least for years. They had not been evacuated for
long, however, when they heard of the enormous collec-
tions of money and goods which had been made throughout
the country. Soon they saw the first materialization,
the ship with clothing from Delft. . . .

In the meantime, the work of drainage and rehabilitation
was continued with great energy. . . . When at the end
of June and the beginning of July the inquiries started in
connection with the official compensation for damage to
furniture, houses and business, soon followed by con-
siderable advances, this recovery began to give a feeling
of reality (Nauta & van Strien, p. 59-61).

The Dutch communities were helped in resolving social conflicts
during the reconstruction period by the assumption of responsibility
by the nation as a whole:

Although the flood of February 1953 was one of exceptional
proportions, floods had occurred before. The rule has
always been "Those who are injured by the water are those
who will turn the water back into its place." In the past,
damage to private property had not been compensated by
the government. At best, this had been a matter for private
relief organizations. It is surprising therefore, that in
this case, suddenly, the full responsibility and cooperation
of the government was tacitly assumed.

A number of factors contributed to the fact that govern-
ment compensation for damages was taken for granted.
First of all the exceptional proportions of the flood;
secondly, the fact that insurance companies in most
cases did not remunerate for damage caused by this
flood; thirdly the fact that the government had also com-
pensated for war damages; and finally the extension of

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State-welfare into various fields. In this connection
it should be noted also that nowadays "the government"
is more than a governing body in the strict sense. By
the modern political development, the government has
more and more become a medium between a people and
its actions. What the government does—and this is
what is expected and the way in which it is experienced
by the people—constituted the expression of the collective
effort of the whole people (Ellemers & in't Veld-Langeveld,
1955, p. 62).

The important thing to note is that compensation for disaster on
the basis of loss represents the use of welfare-state principles by the
local propertied class to maintain their position in the face of the
hazards of fortune, rather than to start over from scratch in the
competitive race. The Red Cross principles of rational charity,
devised to allocate voluntary contributions to achieve maximum self-
support in the long run, are no longer acceptable by welfare-state
standards of social generosity. The principle of full compensation
of losses—which appeared for the first time in the Halifax explosion
of 1917 under the influence of wartime solidarity (Prince, 1920, p.
94-97)—has spread to disasters generally. The ethic of social shar-
ing has spread from the community of disaster victims to a large
part of the public nationally—partly through the experiences of reliev-
ing common suffering during the depression and the World Wars, and
partly through an awareness of the sheer abundance available from
modern economies.

By contrast one might look at the plight of Southern Illinois
mining towns which faced destitution in the years 1929-1933 with little
outside aid and poor prospects for their people even to move elsewhere
under the general depression conditions. Depression, technical prog-
ress, and market changes wiped out most employment. Savings dis-
appeared in the failure of the local banks, which had put their depos-
itors' money into real estate speculation. Investment in private homes
vanished when unemployed miners' homes were repossessed for inabil-
ity to keep up payments. The homes were wrecked and sold as second-
hand lumber by the banks.

Within a few years, house wreckers had demolished not
only the surplus of housing, but a substantial number of
the houses actually needed for the population. Families
of the unemployed took to crowding together more than
ever, to living in tents, in shanties built on the garbage
dump, in chicken houses, in vacant stores (Brown & Webb,
1941, p. 80).

All this physical destruction was caused by the economic breakdown, rather than the other way around; the market system of ownership and distribution, under depression conditions, had become positively destructive of physical assets of the community.

> Local newspapers looked with unconcealed favor on this process. "The sooner that these vacant houses are taken away," said one, "the better it will be for the property that is left. Every time one is pulled down, its value proves to enhance the value of other property" (p. 79).

Economic traditions among the mine workers also caused serious losses. Economic changes made it impossible for marginal mines to operate with the old pay scales, or for bankrupt mines to pay off old wages owing workers. Various attempts to reopen them on a lower standard were made.

> It is obvious that under each of these plans the miners were really subsidizing marginal operations. Well aware of this fact, they assumed that after a time these mines would be able to stand without help. Actually, however, such a time never came at most of the reopened bankrupt mines, and the miners were eventually faced with the choice of either granting more and more concessions, or of halting their subsidy and closing the mines.

> As a result, most of the attempts to open bankrupt mines failed. . . . At a marginal mine in Benton, for example, the miners worked for a full year at wages equal to 70 per cent of the union scale, then demanded the full scale and closed the mine down rather than continue their subsidy (Brown & Webb, 1941, p. 92).

Not able to cooperate with management to maintain their own jobs (due to the non-economic concept of a "full-scale" and of "subsidy"), the miners also failed in every attempt to operate mines cooperatively. Whether keeping more mines open would in fact have been an overall solution is doubtful. The demand for coal was probably not very elastic during the depression, and the result might have been mainly to spread the wage bill more evenly over the nation's miners, cutting the pay and work hours of some while providing work for others otherwise totally jobless. Conflict between the employed and the unemployed, between union and non-union miners, and between union factions was bitter. One of the counties studied had been known from previous struggles as "bloody Williamson."

To the usual ineffectuality of local government was added a decline in tax revenues of catastrophic proportions.

> If local government officials could not keep their house in order during the last years of the coal boom, they were to face an utterly impossible task when the boom ended. . . . The spread of tax delinquency led to a general breakdown of most of the functions of the local governments. Pauper-relief resources diminished rapidly, while need increased. The local governments eventually threw up their hands and called on outside help to save the unemployed from starvation. . . . The town of Benton turned off the city lights, cut the police force to one underpaid employee (for 8,000 people), stopped work on the streets, and reduced the fire department to the minimum required by the insurance companies (Brown, 1941, pp. 85-86).

Paupers without families were traditionally sent to the county poor farms.

> Whether under the care of contractors or of county employees, poor farms were an admitted disgrace to the community—but a disgrace that no one seemed particularly anxious to remove. Indeed, whenever county officials became alarmed over increasing deficits, their first thought was to cut down on the food allowed the inmates at the poor farm (p. 126).

In the face of mass unemployment the local pauper relief broke down entirely.

> During the entire 5-year period, 1925-1929, the townships and counties had been hard pressed to raise $229,000 for pauper relief. Had they been required to carry the cost of relief during the depression, they would have had to raise more than 100 times this sum for the period 1933-1937 (pp. 127-128).

Private charity from the localities was likewise entirely inadequate:

> The drive to collect 1 day's pay brought in about one-third of the quota in both 1930 and 1931, netting about $2500 each year for the care of 300 to 400 destitute families. The Associated Charities in a second town

had almost no money at all; late in 1930 it had $26 to spread among 42 families, and it was eventually reduced to paying 20 cents a week to families in extraordinary need (p. 129).

Finally in 1932 the State Legislature provided some aid to the local governments amid fears of outbreaks of violence from starving people.

By the end of 1932 the townships were able to carry only 10 per cent of the relief cost, while private charity paid for 13 per cent; the Illinois Emergency Relief Commission carried the rest. During the following year the local contribution declined to almost zero (Brown & Webb, 1941, p. 130).

With the coming of the New Deal, Federal aid at last provided minimum adequate standards of living at the same time that it put the unemployed to work building roads, creating reservoirs to overcome the perennial summer droughts, building schools and recreation areas, sewers, water mains, and other badly needed public facilities. Eventually the demand for labor stimulated by World War II permitted those who desired employment elsewhere to leave and brought some industry into the area.

The problem in the impoverished coal communities, as in Middletown, was not any shortage of resources in the society as a whole, but rather an inability of the economic organization of the society to put resources to work to meet people's needs. In other cases very large-scale disasters have come about in which not only local but also regional and national resources were simply inadequate to provide help to the sufferers. Famines in China have recurrently resulted in the death of millions, because there was little food to be sent in from other areas, transportation was inadequate or too costly to permit outside aid, or predatory groups disrupted transportation. In the face of such disaster without relief, social conflict of the sort feared but little realized in the American depression becomes a certainty. Students of disaster relief in China report a variety of responses. Many died quietly. Some sold their children as servants or prostitutes in the cities. But some turned to banditry and to looting the supplies of the rich.

The most extreme cases do not make any demonstration. . . . They do not even beg; they are mute and motionless. . . . (However) this year the most violent passions are loosed. Hundreds of heads have been cut off in the

> effort to maintain order. . . . Half the population is
> hoping and waiting for opportunity to plunder. . . .
> When death is the only alternative, either by starvation
> or by beheading, then nothing will hold them back
> (Central China Famine Relief Committee, 1912, p. 79).

The degree of outside help available appears to be crucial in determining the adequacy of maintenance of the disaster-struck population, the speed of recovery in cases of physical destruction, and the extent of social conflict resulting from the deprivations. These are obvious points, but they may be overlooked if we concentrate attention on too narrow a range of disasters. Loss-sharing arrangements within the community and over the society as a whole are among the most important structural features of the system in dealing with disaster.

The economic problems of reconstruction and their relations to the social organization of communities and systems are of great importance, and have only been touched on in these examples. We now have a considerable literature on the social problems of national economic reconstruction after World War II, from Britain, Norway, Belgium, France, Germany, Poland, Yugoslavia, the U.S.S.R., and Japan, representing a wide variety of approaches ranging from the free market system through partial democratic planning to various versions of totalitarian planning and control. These cases and the examples cited in this chapter suggest the enormous importance of adequate social organization for production. The ineffectuality of the depression-struck communities and nations contrasts sharply with the vigorous response to natural and wartime disasters. The analysis of social and psychological factors in economic growth of underdeveloped areas suggests a similar analysis for disaster-struck nations.

The strong tendency of the affluent society to support a stricken community has in recent years been supplemented by the tendency toward international relief and reconstruction aid from affluent nations to war-devastated nations, not only allies but former enemies. The mixture of sympathy, political competition, and fear of social breakdown and disorder which motivates aid to communities appears also on the international level. It may not be too much to hope that the combination of humanitarianism and enlightened self-interest which expresses itself in relief of disaster and war damage will be extended to the prevention of needless disaster. In spite of differences in values, norms, and beliefs about social evolution between the democratic and communist blocs of nations, the promise of the "bigger pie" through social cooperation may outweigh the hope of victory through conflict which cannot be other than insanely costly.

CHAPTER 6

CONCLUSION: FUTURE NEEDS IN DISASTER RESEARCH

I have tried to do several things in this report. I have summarized the findings of recent disaster studies on several topics, although not on all areas of disaster behavior, since some are well summarized elsewhere and others are virtually unknown. I have tried to locate some of the broad conditions in the social structure or in the nature of the disaster impact which determine the social response, and to indicate that types of response repeatedly found in the present studies may be representative of only a narrow range of favorable situations. I have also tried to take several kinds and levels of disaster behavior and see how they fit together as a social system. In so doing I have tried to relate problems of disaster behavior to more general problems of social organization, and to draw lessons from the findings of social research in non-disaster situations.

The results of this examination of disaster research are intended to be useful in social planning for disaster. The attempts at system analysis suggest the need to consider the multiple effects of certain variables which the policy-maker may want to influence, and may help to locate strategic variables on which policy can operate most effectively. However, the author is not a disaster expert, but primarily a social research methodologist. The main contribution which this book can make is to the planning of future research on disaster and related situations.

Much research has been done on disasters. Yet almost every empirical generalization presented in this book is tentative, incomplete, and crudely measured. I have tried to find consistencies among the empirical findings, to explain them in terms of more general theories, and to organize them into systems of interacting relationships. But these generalizations, explanations, and systems are not to be taken as a set of well-established laws of disaster behavior. Wherever possible I have presented tables or quoted available descriptive reports so that the reader can judge for himself the nature of the empirical data. It will be apparent that the numbers of cases or individuals interviewed, or the number of situations reported, are usually quite small. Some major findings are based on one rather small sampling survey. For example, the discussion of the effect of varying levels

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of motivation and competence on stress symptoms (Chapter 2, especially Tables 2-6, 2-7, 2-8) is based on a study of one particular disaster, a tornado, in a particular locale, rural Arkansas (Marks & Fritz, 1954). The numbers of cases in the four groups which are compared in the analysis are almost ridiculously small: 29, 51, 26, and 51. These groups also vary in characteristics relevant to the behavior in question, such as age, which cannot be held constant because of the small number of cases. The measurements of competence are indirect and inferential; sex is used as an indicator of competence in one table, occupation and having military experience in another.

Again, Table 2-13 presents the striking finding that, except for the seriously injured, subjective loss is less, and helping behavior greater, among those with greater objective losses. This tends to confirm the existence of the relative-deprivation mechanism. But this table is also from the Arkansas tornado, and involves comparing groups ranging from 18 up to 128 cases. The quantitative analysis of supply and demand for disaster services based on the same survey compares 139 impact area with 158 non-impact area respondents, and tries to project from these small numbers to a large population.

These findings, to be sure, tie in with a wide range of less systematic data from disasters, and with some highly systematic studies of non-disaster situations (e. g. , Stouffer's American Soldier, 1949). But it should be obvious that until studies such as the Arkansas survey are carried out in a number of disaster situations, we should be very cautious in generalizing about disaster behavior. With the Arkansas study as a model it should be possible to study a wide range of disasters using the method of random sampling and of focused interviewing.

Further studies of this type can be extended in several ways to produce additional information. Wider areas of non-impact populations should be sampled to see how helping behavior of various kinds is influenced by geographical and social distance. Larger samples could be interviewed to permit us to sort out the influence of interrelated factors such as age, skill, sex, degree of loss, and dependency burden. The duration of after-effects could be followed up over a longer period.

Other findings reported here are based on several qualitative case studies. In Chapter 2 we have four communities in which ineffectiveness of leadership was attributed to recruitment on the basis of social prestige rather than technical competence. In Chapter 2 we offer two cases in which the informal "mass rescue effort" was ineffective due to the great scope and power of the stress (a major flood and

an atomic bomb). At another point a generalization about the develop-
ment of interorganizational communications is based on six cases,
four of them described by one analyst. The problems of organizational
use of volunteer helpers has been examined systematically by Form
and Nosow (1958) for seven organizations, but all in one disaster, in
one area.

Here the recommendation is also obvious: We need more studies
of organizations in disaster, focused on problems raised in the past
studies, and using systematic and comparable guides to observation
or interviewing. Another useful approach would be to study all the
formal organizations in one disaster-struck community and record
their behavior at various phases. Which of them suspended operations,
which of them took on what kinds of disaster functions, which continued
normal operations, at each period? And what were their interrelations
and interdependencies?

The extremely undeveloped state of our knowledge of disaster
is demonstrated by one of the few studies undertaken systematically
to test generalizations from an earlier study: White's (1962) testing
of the results obtained in Killian's (1952) study of "The Significance
of Multiple-Group Membership in Disaster." Killian's article had
become a widely quoted classic in the field. It was based largely on
qualitative interviews with organization members in one particular
disaster, supported by a few interviews from three other cases. It
suggested that formal organizations, even those vitally needed to fight
a disaster, would be abandoned by their personnel who would seek to
assure themselves of the safety of their families. This was supported
by several subsequent qualitative studies, which contain unsystemati-
cally obtained reports of conduct of organization leaders and members.
Yet a systematic sampling of 128 organization members in four com-
parable disasters, undertaken by White, found only a small minority
abandoning organizational responsibility; 77 per cent did their jobs
first, without serious diversion to family roles. In these four disasters,
many people were simply not in any role conflict because they knew
their families were safe; moreover, no less than 30 per cent of those
who did not know for certain that their families were safe stuck to
their jobs. White suggests that the main case relied on by Killian,
the Texas City explosions and fire, was in fact quite untypical of most
one-community disasters (although it may for that very reason be
more typical of nuclear disasters). The White study may, of course,
be criticized because it interviewed its respondents eight years after
the event. However, if it does nothing else, it demonstrates the abso-
lute necessity of continued, systematic testing of hypotheses generated
by single-case and qualitative studies, rather than permitting these
hypotheses to acquire the weight of "laws" through frequent quotation.

The systematic study of the long-run rehabilitation process is almost totally absent from disaster research. A beginning has been made by Bates, Fogleman, Parenton, Pittman, and Tracy (1962). We simply do not have panel studies of the decline of "community feeling" and the restoration of normal social distance, of the development of community conflict over relief and restoration policies, or of possible long-lasting effects of disasters and the recovery effort on integration or cleavage. In this connection studies of the economics of disaster and recovery, particularly in situations where the losses could not easily be compensated by a flood of outside help, are necessary. Recent studies of community power structure and community decision processes suggest some highly relevant factors to consider in studying the recovery process.

The study of even larger-scale disasters, on a regional or national level, has never been systematically undertaken; cross-cultural differences in response to disaster are only scantily known. The historical and anthropological approaches—if guided by hypotheses from the contemporary disaster studies—might produce useful findings going far beyond the horizons of the studies reported here.

A summary of the main types of research which would be required to deal adequately with the problem of disaster would include the following:

1. Systematic surveys of disaster-struck communities, employing rigorous sampling procedures such as those used by the National Opinion Research Center in its Arkansas tornado study. These surveys should be made in different kinds of disasters, in different kinds of communities. The information to be gathered should cover the supply and demand for rescue and relief services, and the incidence of stress symptoms, as in the Arkansas study. Other variables can be added, and additional zones included in the sample, if we want to extend the coverage.

Such studies require a long-term investment in a disaster-research team, connected with a survey organization, which can go into action quickly.

2. Surveys of representative samples of organization members and leaders, covering a wide range of organizations and disaster situations. Such surveys could resolve the conflict between the findings of Killian and White, and begin the examination of many other aspects of organizational performance.

Such surveys could be conducted in connection with intensive community surveys, but they could also be conveniently carried out in

a wider range of disaster situations. The sampling problems are much simpler, and for some purposes at least the lapse of time after the disaster may not be as serious as with general public interviews.

3. A standardized descriptive inventory of disasters occurring in the United States from now on, with data obtained following a standard guide, from selected informants and documentary sources. This will permit us to widen the number of cases and types of disasters and communities on which we have gross observations of phenomena like convergence, panic, anti-social behavior, inter-organizational conflict, the therapeutic community syndrome, etc. Materials from this data file could be coded and analyzed quantitatively once enough cases had been obtained; past disaster studies might be used as a base, although they do not all have data on the same topics.

A "Disaster Study Center" could either send out data-gatherers or contract with nearby social researchers to obtain data on each case.

4. A cross-cultural disaster file, covering disasters elsewhere in the world, using the same techniques as the U.S. inventory. This would be especially useful in finding extreme cases of overload on the resources of the community or nation, and in indicating cultural differences in response to disaster. Natural disaster is still a major social problem in many developing nations; social science can make a direct social contribution to reducing disaster losses in these nations.

5. Long-term panel surveys of the process of restoration in selected community disasters. These could use the same samples as the community surveys suggested under 1., re-interviewing them at intervals—perhaps a month after the first interview, then six months, then two years after. The procedure should be tested in one community and then applied to additional ones as needed to further test major generalizations about the process. The sample for this type of study should include both a random sample of the general public of the community and selected community leaders and interest-group representatives.

6. Historical studies of large-scale disasters of the past, employing sociological and psychological concepts derived from contemporary studies to guide the analysis of historical materials. Such studies could cover very large-scale disasters which occur so infrequently that we are not likely to have any to study contemporaneously; e.g., the Tokyo earthquake, city-wide fires, major plagues and famines. Recent studies of the Irish potato famine of the 1840's (Edwards & Williams, 1957) present a good example of systematic

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historical research. The impact of military and economic disasters might also be included: the German inflation of the 1920's, the U.S. depression of the 1930's, the German and Japanese military defeats of 1945, the repeated conquests and partitions of Poland. These situations have been much studied and have complexities going beyond those of natural disasters, but the application to them of models derived from the natural-disaster situations might be revealing. Thus the restoration of that status quo ante is a major goal in natural disaster processes; military defeat and social revolution in some cases seem to have induced an irreversible change in goals and values or in power-structures.

7. Development of computer-simulation models of mass behavior in community disaster, based on the available information concerning the individual and social processes involved. Such models permit us to test the adequacy of our system analysis, and to experiment with variations in conditions which the existing studies do not represent. Thus we could shift the social contacts built into the model from a close-knit kinship structure to a more individuated structure, as discussed by Hill and Hansen (1962), and see what the consequences were for a given model. Likewise we could vary the scope and intensity of the impact, or the amount of outside aid. The use of such models in voting behavior studies is described by McPhee (1962, 1963).

8. Development of models of national disaster. These could draw upon the historical studies suggested above, and on the analyses of community systems under extreme stress; the basic problem is to formulate the elements of a national social system in such a way that we can systematically think about the consequences of national disaster. Only after plausible qualitative models are devised can any form of quantitative or computer-simulation models be made. Elements in such a model would have to include the economic and political values of the various strata of the population, the power structure, the content and control of mass communications, the strength and control of the police and military forces, the capacity and control of educational institutions at various levels, and, of course, the economic and demographic base of the system.

The major conclusion of my examination of the existing studies can be simply stated:

> To get a reliable system of knowledge about social
> behavior in disaster situations requires a large
> amount of systematic and comparable research.

If we want this body of knowledge quickly, a major investment must be made to obtain it, of the same order as the investment in studies of voting behavior or of workers' behavior in industry. The topics which scientists study depend in part upon individual motivations, in part upon the inherent logic of the science as it develops, and in part upon social decisions concerning allocation of resources and granting of opportunities for research. Systematic research on disaster is difficult and expensive, compared to many other kinds of research. It has been argued that disaster situations are unique opportunities for studying certain basic social processes, so that the curiosity of the scientist and the logic of his science should draw him to them. However, there are many competing situations attracting curiosity and meeting the logical needs of the social sciences which are easier to study, and for which ample funds are available. In the absence of special government programs to support disaster research, it is unlikely that large-scale surveys, comparative studies, and replications of prior studies will be made.

The past research has done the indispensable and difficult pioneering. Future research can be guided by hypotheses derived from the past studies. There is no need to repeat over and over the inadequacies of past methods, which made so many studies inconclusive or limited to a very narrow range of behavior. The whole aim of the present review, and of the collection of essays published in Man and Society in Disaster (Baker and Chapman, 1962), has been to systematize the concepts and hypotheses derived from this large but motley collection of studies, so that research on disaster can go on with much greater effectiveness. Our society may decide, of course, that other topics of research are more significant. Where the priority of disaster research should lie in the allocation of scarce research skills is a question which the present paper fortunately does not have to answer, although it may contribute to an answer.

The best answer to the problem of priority of research needs would be to develop the social sciences to the point where their theoretical structure itself points to the crucial areas of inquiry. To develop a systematic body of propositions regarding the conditions under which people will help one another, or support collective actions to help those who suffer, we must study a much wider range of situations than natural disaster, and we must learn about still more general mechanisms like relative deprivation, selection of reference groups, formation of individual values, of group norms, and of ideologies. If social scientists are to be internally motivated to study disaster, and if they are to study it most productively, they must define the problems of disaster as instances of general problems of social and psychological systems, which are strategic for the development of theory and for the solution of a very wide range of social problems.

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